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GRADUATE EDUCATION AS A STRATEGIC ASSET: DERIVING EDUCATIONAL CORE COMPETENCIES FOR NAVAL AVIATION

June 2019

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EDUCATIONAL CORE COMPETENCIES FOR NAVAL AVIATION**

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LIST OF ACRONYMS AND ABBREVIATIONS

CNAF	Commander, Naval Air Forces
CNATRA	Chief of Naval Air Training
DIB	Defense Industrial Base
E4SFR	2018 Education for Seapower Final Report
FITREP	Fitness Report
FRS	Fleet Replacement Squadron
ILCC	Individual Level Core Competency
IRGE	In Residence Graduate Education
JPME	Joint Professional Military Education
MARADMIN	United States Marine Corps Administrative Message
MBA	Master of Business Administration
NAE	Naval Aviation Enterprise
NAVADMIN	Naval Administrative Message
NAVAIR	Naval Air Systems Command
NEE	Naval Education Enterprise
NPC	Naval Personnel Command
NPS	Naval Postgraduate School
OLCC	Organizational Level Core Competency
OPNAV	Office of the Chief of Naval Operations
SYSCOM	Systems Command
TACAIR	Tactical Aviation
URL	Unrestricted Line

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EXECUTIVE SUMMARY

The release of NAVADMIN 263/18 and the *Department of the Navy Education for Seapower Final Report* (E4SFR) in 2018 signaled a dramatic shift in the Navy's approach to graduate education for its officer corps. NAVADMIN 263/18 outlined the mandatory requirement for future year groups of officers to attend an in-residence graduate education program, while the E4SFR provided the suggested framework for that effort in the establishment of the Naval University system. The ultimate goal for this new educational enterprise is to provide the Navy with officers educated in the art and science of critical thinking and strategic development to meet the emerging and establish threats to national security posed by the "technical and strategic complexities of the Cognitive Age" (Department of the Navy, 2018, p. 6).

One of the methods for ensuring an organization's educational objectives is to use the concept of core competencies. In a 1990 *Harvard Business Review* article, Prahalad and Hamel suggested the practice of identifying an organization's core competencies with the goal of providing sustained, superior competitive advantage over the competition. Using this concept as a guide, we determined that to date, there does not seem to be a recognizable connection between military in-residence graduate education programs and the idea of core competencies. Therefore, the concern is that a graduate education program that does not consider an organization's core competencies falls flat in attaining the desired educational end state.

In examining this problem, we chose to limit our scope to the tactical aviation (TACAIR) component of the larger Naval Aviation Enterprise. Specifically, we chose to target officers who would be most affected by these policy changes and who would have the greatest potential for organization-wide impact after their in-residence graduate education experience. Therefore, the group of officers we identified is considered due-course by the community, meaning they are being groomed for command billets and are in the O-4 pay grade immediately preparing for, or have just completed, an operational department head tour. This group of officers was chosen not only for its promotion

potential but also because their career timing at those junctures is optimal for an in-residence graduate education program.

We built upon and integrated the relevant body of knowledge for deriving an organization's core competencies. Our research methods included reviewing current and historical organizational documentation in the form of statutory promotion and operational screening board guiding documentation. Such documentation included Secretary of the Navy Precepts, Convening Orders, Lessons Learned products, and selected Naval Aviation-specific vision and strategy documents.

Using the referenced data set, we were able to derive six individual level and three organizational level core competencies that could be applied to the TACAIR setting. The six individual level core competencies we suggest for a due-course TACAIR officer are as follows:

- Ability to think critically
- Understanding resource constrained environment operations
- Fostering innovation
- Understanding enterprise operations
- Project management/"Team of Teams" concept
- Versed in organizational culture

Through the perspective of a TACAIR squadron, we suggest the following three organizational level core competencies:

- A qualified, standardized, innovative workforce
- Ability to supply mission capable aircraft for sustained carrier operations
- Proactive, versatile command culture

As the body of work on core competencies suggests, an identified core competency must exhibit applicability to a conceptual framework. For example, Prahalad and Hamel

(1990) suggested that a core competency must be difficult for competitors to imitate, provide a perceived benefit, and provide access to wide variety of markets. Similarly, we developed a framework consisting of three characteristics we deemed necessary of a core competency. The three framework characteristics a TACAIR core competency must exhibit are:

- Applicable to multiple mission sets
- Difficult for adversaries to imitate due to complexity or cost
- Provides perceived benefit to individual or organization

Using the guidance of *Joint Publication 2-0: Joint Intelligence* we further provided analytical confidence levels for each of our core competencies as they pertained to our framework.

At the completion of our efforts, we determined a number of recommendations for our core competencies and avenues for suggested further research. Our primary recommendation is that graduate-level courses of study attended by TACAIR be built around our individual level core competencies in order to provide graduates the benefits they suggest. Secondly, we recommend that an in-residence graduate education be undertaken by TACAIR officers no later than immediately following the completion of their department head tours. We identified this time frame as the most ideal window of opportunity to both maximize educational impact and minimize career timing implications. Lastly, because the skills taught in an MBA course of study in strategic management and organizational leadership share many of the goals of our core competencies and align with E4SFR objectives, we recommend the Graduate School of Business and Public Policy at the Naval Postgraduate School offer such a degree with core classes supplemented by secondary “tracks” concentrated in courses applicable to warfare specialties outside of aviation (surface, submarine, special warfare, etc.).

Finally, we offer two avenues of suggested further research. The first is to conduct research that is more quantitative in nature. We acknowledge that our efforts were limited to publicly accessible information and subjective assessments. Accordingly, we suggest

the future iterations of research utilize research methods such as surveys and interviews with senior Naval Aviation stakeholders. We believe this level of research would offer great insight into the desired core competencies of TACAIR via direct fleet feedback and most likely generate a more refined list of suggested competencies. Additionally, we suggest that the scope of this research be expanded into different warfare specialties and even sister services. Throughout the course of our research, we found many examples that indicated that the study of core competency derivation and application is not just a Navy problem. This suggests that knowledge gaps exist outside of Naval Aviation and would benefit from focused attention and study.

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- Prahalad, C. K., & Hamel, G. (1990, May–June). The core competence of the corporation. *Harvard Business Review*. Retrieved from <https://hbr.org/1990/05/the-core-competence-of-the-corporation?autocomplete=true>

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We humbly and sincerely thank you all.

Lou & Gazer

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I. INTRODUCTION

Education is currently viewed as an obstruction in naval career paths by the majority, an obstruction exacerbated by the needs of the personnel assignment system. Education should instead be valued as a means for gaining knowledge and experiences, which could enrich careers. This would also incentivize it and improve the cultural perception of education within the system. (Department of the Navy [DoN], 2018c, p. 54)

While the Navy may not be considered by taxpayers as a corporation, it more closely relates to business than one may think. Effective, efficient, and economical—these concepts hold true for business companies, as well as the Naval Aviation Enterprise (NAE). The NAE numbers over 190,000 sailors, Marines, civilians and contractors; oversees 3,700 aircraft and 10 aircraft carriers; and influences a budget of more than \$40 billion annually (Shoemaker, Davis, & Grosklags, 2015, p. 2). The NAE’s process owners—Commander, Naval Air Forces (CNAF) and the Deputy Commandant for Aviation—direct the overarching governance for their services and are its prime stakeholders (Shoemaker et al., 2015).

At its heart, the NAE is the framework of business processes connecting the defense industry directly to Naval Aviation. A few of its goals are to “produce readiness, ... sustain Fleet wholeness, ... and increase efficiency” (Naval Aviation Enterprise [NAE], n.d.-a). These concepts are similar to what drove companies in the 20th century to increase management capabilities and leadership skills of their members through the creation of the Master of Business Administration degree. Additionally, the NAE depends on executive and commanding officers of units to be good stewards of the NAE’s assets. Each unit within the NAE’s purview can be considered a small business unit consisting of personnel, funds, and a product.

Education sets the foundation of successful organizational practices whether commercial or military. The secretary of the Navy has shown great interest in improving the quality and effectiveness of the Navy’s educational development. The 2018 *Education for Seapower Final Report* (E4SFR) is an in-depth examination of the state of education in the Navy. The E4SFR is the most comprehensive and up-to-date secretary-level guidance

relating education to maritime superiority available. It serves as the strategic-level education document for the Department of the Navy (DoN), providing a road map for future Naval Education Enterprise (NEE) efforts and objectives.

The E4SFR, coupled with the release of NAVADMIN 263/18, signaled a dramatic shift in the Navy's stance on education for its officers. Among other requirements, NAVADMIN 263/18 has mandated in-residence graduate education (IRGE) for Year Group 2015 officers and beyond prior to assuming major command (DoN, 2018b). Significant emphasis is now placed on education as a strategic asset, not only for individual officers but the naval service as a whole. This renewed education focus is in response to and in support of the 2018 *National Defense Strategy*, wherein Secretary of Defense Mattis identified Professional Military Education as having stagnated and highlighted its importance to achieving national strategy goals (Mattis, 2018, p. 8).

The E4SFR makes clear that education is to be tied directly to supporting national strategic objectives and strongly urges that the naval profession moves away from education just for education's sake. Given this charge, it is appropriate that significant efforts are made to ensure that quality of education and not quantity of education becomes the new normal. Therefore, an effective method must be sought to ensure that the content of an IRGE program meets the mandates of NAVADMIN 263/18 and the E4SFR. One such method that is commonly suggested but often misunderstood is the concept of core competencies.

A. PROBLEM STATEMENT

Core competencies are generally understood as collections of knowledge or skills attributable to successful individuals or organizational performance (Lahti, 1999). In the business environment, identification and management of core competencies directly result in sustained superior advantage over a corporation's competitors (Prahalad & Hamel, 1990). There is a clear connection between an organization dedicating resources to identifying its core competencies, formulating strategy around them, and outperforming its peers. We seek to discover whether that process can be applied to military graduate education.

To date, there does not seem to be a recognizable connection between military IRGE programs and the idea of core competencies. This mismatch between an organization's identified core competencies and the educational objectives of an IRGE program suggests that graduates are less than ideally prepared to meet the mandates of the E4SFR and NAVADMIN 263/18. Further, it follows that the gap in core competency mindset has potential to negatively affect an organization's operational effectiveness.

B. PROJECT FOCUS

This project focuses on the Tactical Aviation (TACAIR) community's in-residence graduate education (IRGE). The TACAIR community is composed of those officers assigned to squadrons operating F/A-18, EA-18G, F-35, and E-2 type/model/series of aircraft. The active duty members of this community have prescribed training timelines and tour lengths, which are prerequisites to command and make obtaining IRGE difficult. Additionally, in many cases, the advanced degrees obtained by TACAIR officers may not be business, management, or aviation related.

Current Naval Postgraduate School (NPS) MBA degree offerings are concentrated in the areas of Manpower Management, Logistics Management, Financial Management, or Acquisitions (DoN, 2018c, p. 245). These focused specialties account for only a fraction of TACAIR leadership responsibilities. Unit commanders need to have knowledge in each area, as it relates to aviation, to fulfill the NAE's needs and effectively lead squadron-sized and larger units.

C. PURPOSE

The purpose of this project is to derive core competencies from DoN promotion and screening board documentation, as well as Naval Aviation vision and strategy documents, and deliver TACAIR-specific educational recommendations to NAE stakeholders aligned with E4SFR objectives. A graduate education course of study that aligns the NAE's core competencies with E4SFR objectives would benefit Naval Aviation and would supplement leadership skills for those commanding Naval Aviation units. The data for this project is contained within the language of secretary of the Navy-approved Precepts, Convening Orders, Lessons Learned, Naval Aviation vision and strategy

documents, and Community Briefs, which are available to board members to serve as guiding documents to establish promotion criteria.

The primary research question to be answered is as follows:

- What core competencies derived from Navy promotion and screening guidance documents are essential for due-course¹ TACAIR officers to be obtain through IRGE?

The following are the secondary research questions to be answered:

- How do these derived core competencies relate to daily operations of a squadron-sized unit, and how do they meet NAE's needs in supporting E4S objectives?

D. SCOPE

Based on a multitude of factors, the opportunities for TACAIR officers to attend IRGE are rare and fleeting. The tour lengths of TACAIR officers are tightly managed by the Naval Personnel Command (NPC) and are primarily driven by operational requirements. The only opportunities available to TACAIR officers for IRGE are the Naval War College, Naval Postgraduate School, or on the rare occasion, a civilian institution.

This project focuses primarily on those TACAIR officers in the O-4 pay grade who have been selected for, currently serve in, or have completed an operational aviation department head tour. These officers are considered “due-course” officers who are being groomed for follow-on Commander Command tours and represent key influence points for the NAE as a whole. This demographic reflects the most likely window of opportunity afforded to due-course TACAIR officers to obtain IRGE and maximize follow-on tour impact at the squadron or higher level

¹ We fully discuss and define the term *due-course* in following sections. Due-course in this instance refers to officers who have been identified as top performers in their community and are actively groomed for command roles.

E. RESEARCH METHOD

This study primarily focuses on documents related to the O-5 statutory promotion and Aviation Major Command, Command, and Department Head Screening Boards to derive core competencies beneficial to the NAE. Because all board proceedings are of a closed nature, these documents are the best and only insight available, which can be used to infer those characteristics a candidate would possess that would make them successful in the promotion or screening process. Further, these documents provide the appropriate level of specificity unique to the due-course TACAIR community as measured by successful promotion and screening results.

Research methods focus on analyzing language contained in these guiding documents to derive core competencies by integrating and building upon relevant core competency literature. These core competencies are then compared against industry and business-accepted criteria for validating an organizational core competency. Finally, these competencies are presented and recommendations provided as to their use in the IRGE environment to meet the NAE's needs and support E4S objectives.

F. ORGANIZATION OF STUDY

This thesis is comprised of six chapters. In Chapter I, we introduced the topic and explained the purpose, scope, and methodology of the study. Chapter II provides critical background foundational knowledge of the NAE, TACAIR community, statutory and screening boards, precepts, and convening orders. Chapter III provides a literature review on the relevant core competency body of knowledge and presents summaries of selected sources. Chapter IV describes the derivation of core competencies from Navy guiding documents and their relation to NAE organizational operation and E4SFR alignment. In Chapter V, we provide an analysis framework for our derived core competencies. Finally, Chapter VI presents a summary, recommendations, and suggested avenues for further research with regard to TACAIR IRGE application.

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II. BACKGROUND

In this chapter, we provide background knowledge of several aspects of Naval Aviation, which aid in framing the study. The NAE is first examined to highlight its impactful role in both the day-to-day operation of Naval Aviation units as well as its strategic role. Next, specific aspects unique to the TACAIR community are discussed. The TACAIR community is unlike other communities within Naval Aviation, and its inner workings are presented in order to better understand officer career timing. Then, a discussion on the statutory and screening board process is presented. The goal of this discussion is to explain how board processes work and why the guiding documents provided to its members are vital to its function. Lastly, the naval profession's current and future efforts for graduate education are discussed to provide knowledge of the challenges and opportunities IRGE programs present.

A. THE NAVAL AVIATION ENTERPRISE

The NAE was born out of necessity in the late 1990s. Naval Aviation units exhibited wide variances in readiness levels as compared to one another over time (NAE, n.d.-c). Resource expenditures to combat readiness problems increased at a pace that ultimately eroded Naval Aviation's buying power (NAE, n.d.-c). Further, as these costs continued to climb, there was a lack of organizational understanding as to how best to recapitalize airframe assets and extend operational flight hours (NAE, n.d.-c). The year 2004 marked the official arrival of the NAE as we know it today, resulting from integrating lessons learned from successful process improvement efforts such as the Naval Aviation Pilot Production Improvement Program (NAPPI), Naval Aviation Readiness Integrated Improvement Program (NAVRIIP), and the Aviation Maintenance and Supply Readiness (AMSR) group (NAE, n.d.-c).

Today's NAE is the framework that interconnects warfighter fleet requirements to resource sponsors, which fund requirements (i.e., Office of the Chief of Naval Operations [OPNAV] N1, N9, N98), and to major SYSCOM providers (e.g., Naval Air Systems Command [NAVAIR], Naval Sea Systems Command [NAVSEA], Naval Supply Systems

Command [NAVSUP], Space and Naval Warfare Systems Command [SPAWAR]), which execute requirements (NAE, n.d.-c). This framework of supporting and supported stakeholders, depicted in Figure 1, executes the mission of sustaining and advancing readiness and warfighting capabilities at the best possible cost (Shoemaker et al., 2015).

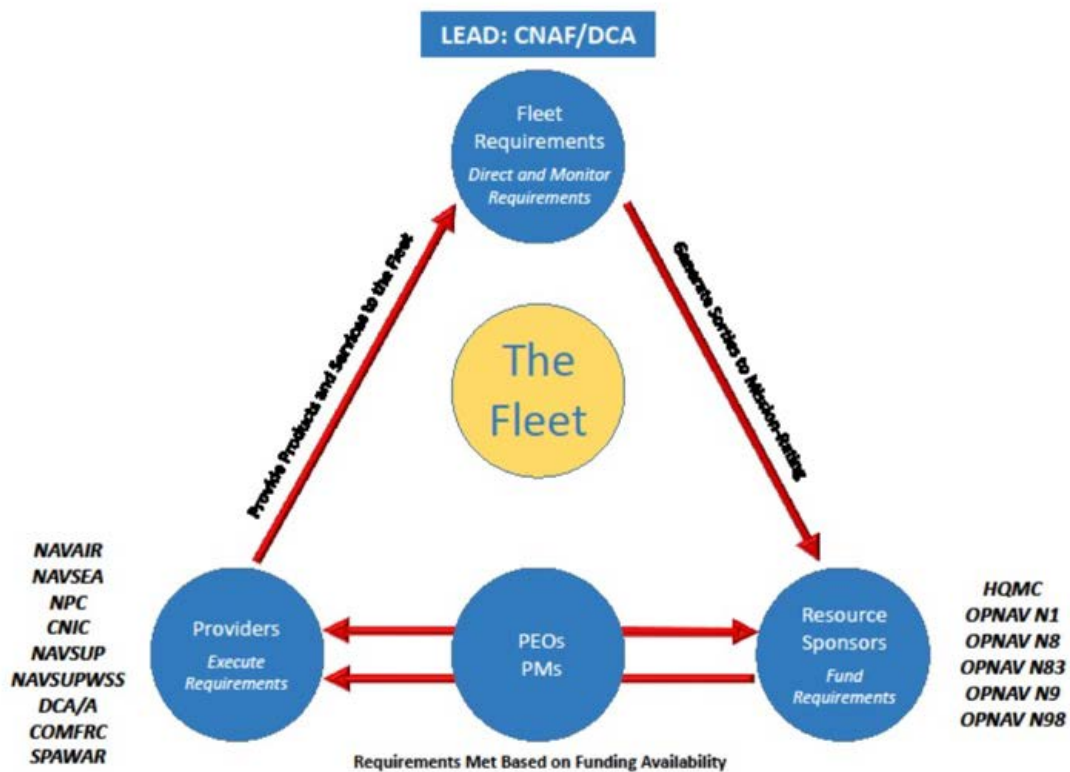


Figure 1. Naval Aviation Enterprise Relationship Framework.
Source: Naval Aviation Enterprise (n.d.-a).

1. NAE Leadership

The NAE is a metrics-driven, enterprise-wide business process framework with the singular goal of advancing warfighting capabilities at the best possible cost. This process relies heavily on the interdependent nature of several cross-functional teams operating under the direction of the Air Board Executive Committee (EXCOMM) and the Air Board.

The EXCOMM is comprised of members “whose leadership assignment is within Naval Aviation and whose decision-making authority guides the course of core aspects of Naval Aviation” (NAE, n.d.-b). Examples of EXCOMM members include CNAF, the Deputy Commandant for Aviation (DCA), OPNAV 98, Chief of Naval Air Training (CNATRA), and NAVAIR. The remaining members of the Air Board are organizations that have a “strong interdependent relationship with the Enterprise and Naval Aviation which necessitates an acknowledged need to be informed to advance the efforts of both Naval Aviation and the Air Board member’s parent command” (NAE, n.d.-b). Figure 2 depicts the relationships between the EXCOMM, Air Board, and Cross-Functional Teams (CFTs).

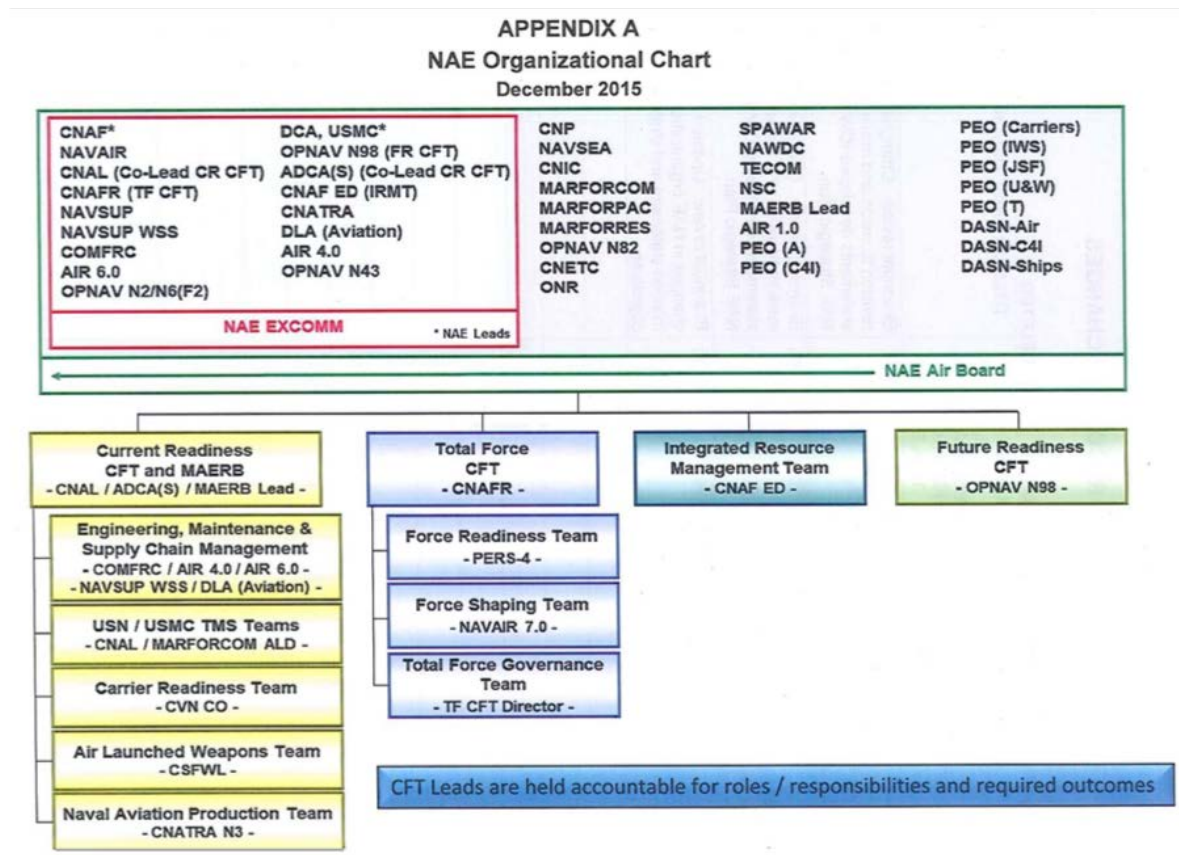


Figure 2. EXCOMM, Air Board, and CFT Relationship Diagram.
Source: Shoemaker et al. (2015).

2. The Enterprise View and Why it Matters

Collaboration, metric analysis, transparency, and interdependencies have been key to the success of the NAE initiative. The enterprise view taken by NAE enables the organization to achieve “getting the right people together with the right information to break down barriers, spearhead cost-effective initiatives, and provide leadership with critical data to make superior decisions” (NAE, n.d.-b). As LeFon (2009) points out, this “enterprise view” taken by the NAE is composed of four principles:

- Process View—horizontal thinking (beyond the boundaries)
- Transparency—each piece of the enterprise must see the process ahead of it and the process behind it
- Metrics—that are linked throughout the process and build on one another
- Accountability—for actions taken and not taken. (p. 37)

As laid out, this enterprise view is anathema to a typical hierarchical schema found in many military organizations, but for an organization as large and ranging as the NAE, it works. To industry counterparts savvy in the language of business, the enterprise way of thinking is the norm with a track record to support its successes.

LeFon’s enterprise characteristics are not limited to the NAE. Understanding how the enterprise approach of the NAE works is of paramount importance to those in the TACAIR community who find themselves on the due-course career path. Much like any other business organization, the foundation of an enterprise framework is built upon many individual small business units contained within its organization.

For the NAE, those small business units are represented by the individual squadrons that NAE efforts support. In order to be effective within their own organization and the NAE as a whole, due-course TACAIR officers must possess a keen understanding of business processes and the benefits a highly interdependent organization offers. It is not enough that prospective XOs and COs demonstrate a mastery of tactics. In their role as commanding officers charged with the leading of a squadron, these officers are integral components of the NAE enterprise and must be able to understand the impact their organizations have on an enterprise level.

B. THE TACAIR COMMUNITY

The TACAIR community is comprised of those aircrew, officers, and sailors which employ and maintain the F/A-18, EA-18G, F-35, & E-2 type/model/series of aircraft. Each of these squadrons is a part of a larger organization called a Carrier Air Wing. A Carrier Air Wing is the heart of Naval Aviation's power projection capability. A typical Air Wing has an average of eight squadrons associated with it, of which six are of the TACAIR variety.

The TACAIR community is a small subset of the larger Naval Aviation forces yet presents unique challenges to its officers obtaining IRGE. Historically, extensive initial flight training requirements made it extremely difficult for due-course officers to attend IRGE, requiring the Aviation Community to target education opportunities during post-department head and post-command tours (DoN, 2018c, p. 336).

1. Due-Course Officer Definition

The term *due-course* in relation to TACAIR officers is highly referenced throughout this project, and it is worth defining the term here. Due-course is vernacular used extensively by NPC and the Naval Aviation community in reference to its officers. A due-course officer is an officer within the community whose promotability and screenability potential has been deemed to be high. It is expected that due-course officers will bring value to the community. Accordingly, they are subject to distinct career management decisions as opposed to non-due-course officers.

Due-course officer career paths are managed such that they are afforded opportunities to maximize their potential for promotion to O-5 and successful screening for command. These officers are "groomed" over many years to prepare them for eventual command roles. Due-course officers will be detailed to operationally demanding billets, which demand their continuous presence in a squadron environment to maximize their time in the cockpit. Non-flying opportunities for due-course officers are equally demanding because they are typically associated with shore assignments that do not offer opportunities for IRGE.

2. TACAIR Training Pipeline Implications

The training pipeline for TACAIR officers, regardless of designator, is the longest in the CNATRA and Fleet Replacement Squadron (FRS) syllabi taking up to three years from initial accession to arrival at an officer's first operational squadron (Naval Personnel Command, 2019a). During this time period, the student naval aviator or flight officer is afforded no opportunities to attain graduate education. The time demands of a student in flight school are tremendous, requiring many hours of rigorous study in order to meet minimum passing criteria. The long training pipeline is the first of several unique characteristics of the TACAIR community that severely impede an officer's ability to obtain IRGE.

3. The Junior TACAIR Officer

Junior officers in the TACAIR community are those who are in their first sea tour and are typically in the O-2 and O-3 pay grades. On average, their first sea tour will last approximately 36 months during which their sole priority will be to achieve basic and advanced warfare qualifications in their respective platforms (Naval Personnel Command, 2019a, p. 12). For the junior officer, there is again simply no time allotted for graduate education. Any attempts at graduate education must take place during their off-duty hours and though rare, this does sometimes occur.

More often, the operational demands of the squadron preclude a junior officer from obtaining any graduate education. Within a three-year assignment to their initial squadron, most junior officers will experience an average of three six-month or longer deployments. Each of these deployment periods is typically accompanied by a work-up period adding up to several months away from the squadron's home station. Coupled with most deployments taking place on an aircraft carrier, any type of distance learning is nearly impossible due to operational demands placed upon the squadron and severely degraded internet connectivity. A junior officer's follow-on shore rotation offers equally sparse ability for graduate education.

As Naval Personnel Command explained in a recent brief (2019a), the first opportunity for a junior officer in the TACAIR community to experience a shore tour

occurs approximately five to six years after initial accession. Though the brief explains that this time period roughly aligns with other warfare specialties like the Surface and Submarine communities, TACAIR junior officers find themselves professionally lagging behind their counterparts due to the accumulation of Not Observed Fitness Reports (FITREPS) obtained during flight training (Naval Personnel Command, 2019a, p. 12). This professional lag is a contributor to the limited access a due-course TACAIR officer has for graduate education as they continuously struggle to remain competitive with their peers for promotion.

The first shore tour for a due-course TACAIR officer is typically in what is referred to as a “production billet.” As spelled out in the *2018 Nov VFA Boilerplate* memorandum written by PERS-432G, the VFA junior officer community detailers, and made available to the VFA community junior officers, “Naval Aviation prioritizes production billets for your first shore tour, defined as any flying job which contributes to the support and manning of the VFA community” (PERS-432G, 2018, p. 2). These billets are typically associated with orders to community Weapons and Tactics Schools, Fleet Replacement Squadrons, Test Pilot School, Naval Air Warfare Development Center, or CNATRA Training Squadrons.

Though technically a shore assignment, these billets for due-course TACAIR officers are anything but a shore respite. Assignment to these units requires a commanding officer endorsement, and officers are subject to an intense screening process. There is a reason for this scrutiny. These officers will have distinguished themselves as community standouts ready for increased leadership responsibility. They fill those roles as Instructor Aircrew in these billets training the next generation of fleet accessions or furthering the community’s warfighting knowledge. This is a responsibility not given lightly. As with any instructor role, there are rigorous instructor qualification syllabi in each of these billets, which begin the moment a new instructor joins the squadron. Achieving all the requirements to be considered a fully qualified instructor can in many cases take up to a year. Additionally, these units often utilize national training assets requiring cumulative months away from home for the instructor cadre in any given year. In many cases, the first

shore tour for a due-course TACAIR officer is as busy, if not more so, than their first sea tour.

These time demands make it difficult for TACAIR officers to obtain IRGE. There are, however, many who chose to utilize distance learning options such as the Naval Postgraduate School's Executive MBA program to meet their graduate education goals. This comes at a significant personal price to an officer as their off-duty time is now dedicated to graduate education. Their education efforts are also largely unseen and undervalued by their chain of command until a degree or certificate of completion is awarded. This means there is a professional price to pay should their instructor duties falter in any way due to their time dedicated to off-duty education.

4. Non-Due-Course Officers

It is worth briefly discussing those officers who are not considered due-course. Up until their first shore tour, junior TACAIR officers are treated uniformly as they have not yet distinguished themselves among their peers. The negotiation process for their first shore tour is where the wheat begins to separate from chaff.

Non-due-course officers are typically not billeted to top-tier production billets and are instead often detailed to staffs, pilot exchange programs, or USNA/ROTC company officer billets (Naval Personnel Command, 2019a, p. 9). These billets offer a much greater, and arguably easier, opportunity for first shore tour TACAIR officers to obtain graduate education. However, Naval Aviation significantly values "time in the cockpit" for promotion purposes over time spent seeking graduate education or in a program of higher learning and indeed views actively seeking graduate education over time in the cockpit as a "black mark" on an officer's record (DoN, 2018c, p. 31).

Thus, while non-due-course officers have a comparatively greater opportunity to obtain IRGE as compared to their due-course counterparts, that opportunity comes at a price, which is paid during the promotion and screening process as non-due-course officers (those who did not complete a production tour) do not enjoy as successful promotion and screening rates. Figure 3 depicts the FY-19 Aviation Department Head Screen Board results and highlights the screening success rate for those TACAIR officers in production

billets (FRS, Training Command [TRACOM], WWS/NSAWC [Naval Strike and Air Warfare Center], Test Pilot School [TPS]).

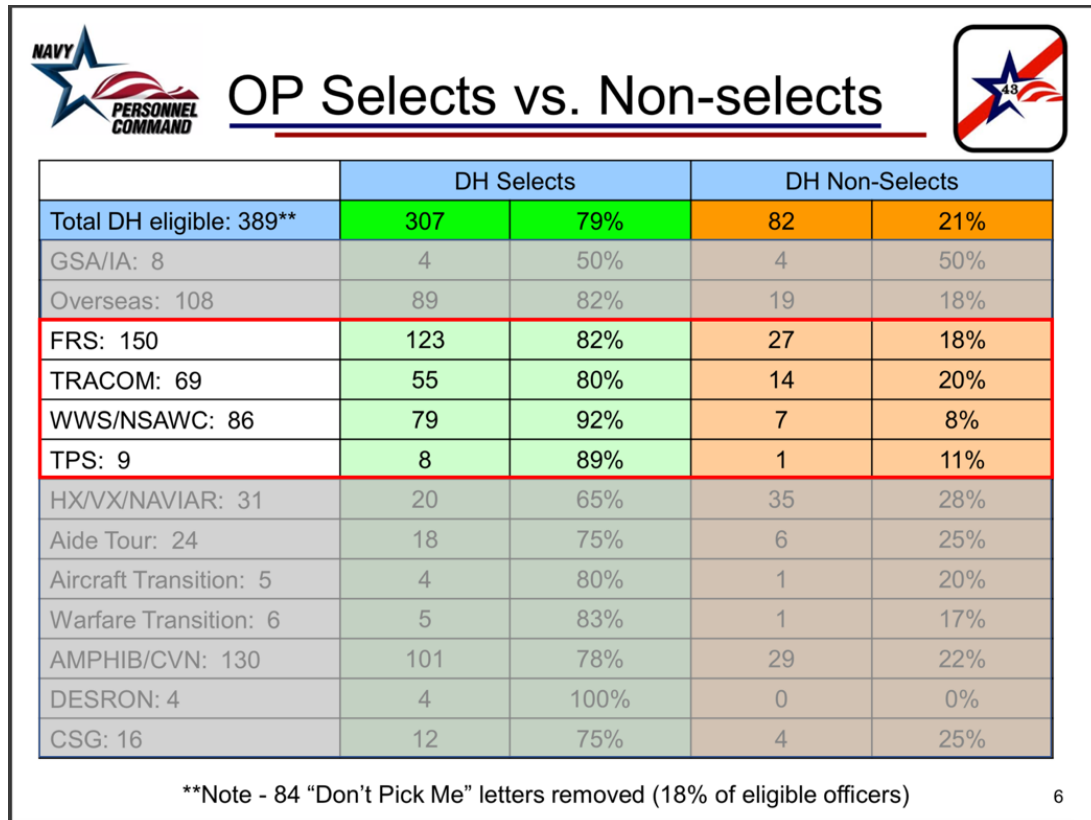


Figure 3. Aviation Department Head Screening Rates for Production Tours. Adapted from Baze (2018b).

The overwhelming screening success rate enjoyed by those officers in production billets cannot be ignored. This sends a clear signal that production billets are highly valued by Naval Aviation and officers in those billets experience high screening success rates.

5. The Department Head TACAIR Officer

Sustained superior performance in the first sea and shore tour is highly valued by Naval Aviation as selection criteria for department head (Naval Personnel Command, 2019a, p. 13). Prior to achieving this milestone, the due-course TACAIR officer will have outperformed his or her peers in his or her first sea and shore tour. As discussed, doing so

comes at the cost of attaining graduate education. This fact is explicitly explained in the *FY-20 Active-Duty Line Community Brief* where it states, “Due to compressed career path after winging, graduate education is frequently not possible prior to LCDR” (Naval Personnel Command, 2019a, p. 13).

The compressed career path results in many TACAIR officers reaching their operational department head role having never had the opportunity to explore IRGE options. As was the case with their first sea and shore assignments, a due-course officer’s time demands as a department head are unyielding. Though not burdened with mastering tactics, techniques, and procedures, a department head’s responsibilities vastly outweigh the ones he or she had as a junior officer. Deployments and work-up cycles are similar in duration and scope as they were during their junior officer time period, albeit this time with greatly added responsibilities and time demands. Accordingly, any opportunity for graduate education must take a back seat to the operational needs of the squadron. Therefore, many department heads are not afforded a graduate education opportunity while fulfilling the department head role.

6. The Fleeting Window of Opportunity

In practice, a due-course TACAIR officer’s first opportunity for IRGE comes at the end of his or her department head assignment, but that opportunity is subject to additional caveats. The post-department head time frame is a contentious temporal period for a TACAIR officer. The duration of the window itself is highly dependent on each specific officer’s career progression to that point, as well as the community’s assessment of their future value. Regardless of the myriad of factors that surround each TACAIR officer’s career progression, the approximate window of time available for an IRGE opportunity is between one and two years centered about a major career milestone. Figure 4 visually depicts where a typical TACAIR officer’s IRGE window of opportunity exists vis-à-vis their Aviation Command Screen Board and Statutory O-5 Promotion Boards.

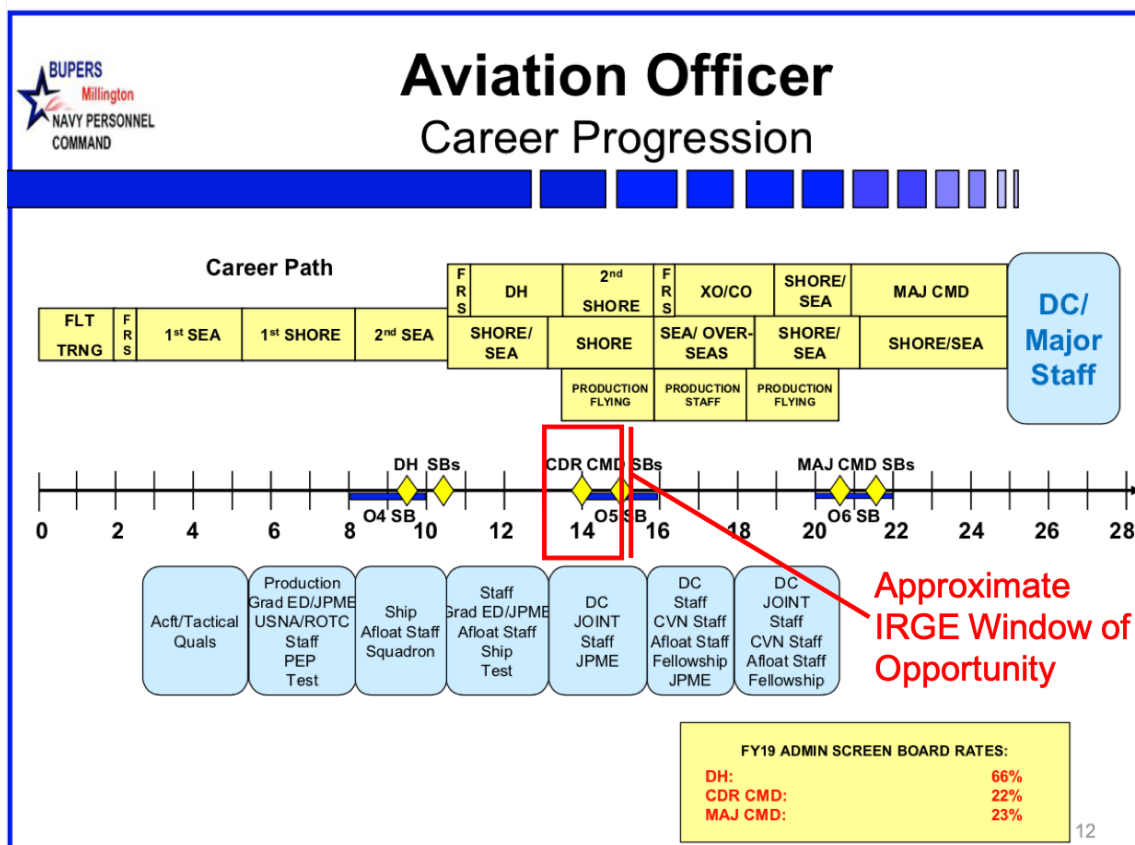


Figure 4. Post-department Head TACAIR IRGE Window of Opportunity. Adapted from Naval Personnel Command (2019a).

This narrow window of opportunity is contentious for several reasons. First, the goal of TACAIR community detailers is to ensure due-course TACAIR officers in their charge are as competitive for promotion to O-5 and screening for operational command as possible. The billets and assignments to support this goal within the IRGE Window of Opportunity run counter to a TACAIR officer being detailed for IRGE.

Akin to the VFA JO Boilerplate Memo, the *Post-DH Detailing Process Boilerplate* provided to post-department head officers clearly states that community jobs are valued and lists several key billet examples including "NPC (the Bureau), FRS OPSO/TO,² and

² Operations Officer and/or Training Officer billets

AIRLANT/PAC³" and further highlights that joint assignments are reserved for those officers who are deemed to be "on-track"/due-course (PERS-432F Detailer, n.d., p. 1). Thus, those officers considered due-course are rarely afforded a set of orders that support IRGE in lieu of maintaining a competitive edge for promotion.

Secondly, FITREP timing plays a significant role in which billets are offered to a due-course post-department head TACAIR officer. Due to their instructional nature, all IRGE opportunities result in a Not Observed FITREP being submitted on behalf of the officer undergoing graduate education. Therefore, careful consideration is given to officers who desire to pursue IRGE, as their record must stand on its own to overcome a peer's observed FITREP from one of the community billets discussed above. The *Post-DH Detailing Process Boilerplate* makes this clear using the Naval War College as an example: "War College is a great choice for someone with time available and a desire to get JPME and a Master's Degree in residence" (PERS-432F Detailer, n.d., p. 1).

Lastly, the time requirements of a joint duty assignment within the Window of Opportunity contribute to the high demand placed upon it. Joint tours are highly valued by promotion and screen boards alike. FITREPS documenting joint tour credit provide a significant amount of gravitas to an officer's promotion potential. However, joint duty assignments have a minimum statutory length of 24 months as codified in Title 10 of U.S. Code (Armed Forces Act, 1956). In the case of due-course officers who have screened for command and are deemed a community asset, that tour length can be waived to 22 months and one day served (NPC, n.d.). This 22–24 month "joint lock" further impedes a due-course officer's ability to attend an institution that offers IRGE.

7. The Window of Opportunity and IRGE

Based upon the requirements of managing a due-course officer's career path, the window of opportunity for such officers is both fleeting and contentious. As discussed, the window only applies to a small subset of due-course TACAIR officers, for a very small duration of time in any given year. What this means for the TACAIR community at large

³ Commander, Air Forces Atlantic or Air Forces Pacific staff billets

is that an IRGE opportunity within the Window of Opportunity is a rare and valuable commodity and should be treated as such.

In order for Naval Aviation to reap any benefit in detailing due-course TACAIR officers to IRGE, the community must take advantage of this precious time and maximize educational value to the individual and the NAE. The most appropriate method to meet these needs is found in a business-related course of study as is typically found in an MBA program.

Finally, utilizing the Window of Opportunity for IRGE has significant potential to dramatically affect an officer's promotability and screenability. Not Observed FITREPs associated with IRGE, community devaluation of graduate education, and due-course career path business rules combine to make IRGE during the Window of Opportunity a death knell of sorts for a due-course officer's upward mobility. Therefore, should a due-course officer get an opportunity attend IRGE during their Window of Opportunity, all efforts must be made to ensure that the course of study engaged in results in value added to their path to achieving operational command.

C. STATUTORY PROMOTION AND OPERATIONAL SCREEN BOARDS

A discussion on an officer's graduate education is incomplete without comprehending how it relates to the promotion and screen board process. All TACAIR officers face several statutory and operational screening milestones throughout their career. These milestones are depicted as yellow diamonds in Figure 4. An officer's record is reviewed twice, once each at each board, during their milestone fiscal year. Successful screening of both boards is required to ensure upward mobility for a due-course TACAIR officer. Functionally, an officer must be selected for statutory promotion to the next pay grade in order to be considered competitive for an operational screening board.

The inner workings of each board are nearly identical and do not merit discussion in this case. However, a broad understanding of the goal of each board, its membership, and selection criteria is germane to this project and will be discussed for each board process.

1. Statutory Boards

All officers in the line community, regardless of warfare designator, undergo promotion boards as required by Title 10 statute. The purpose of these boards to determine an officer's promotion potential to the next pay grade and provide selection recommendations to the secretary of defense for congressional confirmation. Board membership warfare specialty for the Active-Duty Unrestricted Line promotion board is diverse. A typical board is composed of five Aviators (at least one designated Naval Aviator and Naval Flight Officer each), four Surface, three Submarine, one Special Warfare, and one Special Operation with one Joint Representative, three Acquisition Professionals, and Minority/Female representation included in the above requirements (PERS-80, 2018, p. 8). This diversity of warfare specialties presents challenges for board members, primarily knowledge gaps vis-à-vis community values outside one's own. Selection criteria for promotion at this stage is warfare specialty agnostic; therefore board members are required to vote on members outside of their own warfare specialty. The Secretary of the Navy Community Briefs attempt to mitigate those gaps in community-specific values for voting members of the board.

a. Community Briefs

Each board member is an experienced and proven expert within their warfare community; they are not however, knowledgeable of other community's values. This presents a unique challenge to board members ascertaining the future value of an officer as measured by community values they do not know as well. To even the playing field, the secretary of the Navy approves and makes available a community brief to board members. This community brief specifically outlines the typical career progression and community values of each community to board members.

The community briefs provide crucial community insights to voting board members unfamiliar with a community not their own. These briefs help explain unique community situations such as the extensive TACAIR training pipeline duration and subsequent limited opportunity for graduate education as compared to other communities. These documents

aid voting members of the board in making informed decisions as to promotion potential, but they are not the only guidance provided.

b. Convening Orders

Determining promotion value irrespective of warfare community is another challenge faced by statutory board members. Therefore, in addition to community briefs the secretary of the Navy provides a unique Convening Order to each board. The Convening Order provides the secretary of the Navy a single, unilateral avenue for direct communication with board members. SECNAV Convening Orders offer executive-level guidance and values to voting members of the board. Contained within each Convening Order is language dictating to board members those attributes of an officer's career progression deemed desirable for promotion.

A board's Convening Order provides the ultimate definition for board members as to what is considered "best and fully qualified" criteria for promotion candidates (PERS-80, 2018, p. 14). These documents further define the skill requirements that voting members of the board must use in each competitive category when reviewing an officer's record (PERS-80, 2018, p. 14). For example, the *FY-20 Convening Order for the Active-Duty O-5 Line Community* provides specific valuation guidance on education and professional development, among other attributes (Woods, 2019, pp. 6–7).

c. Applicability to the TACAIR Officer and IRGE

Because successful selection to the next pay grade is required for a TACAIR officer to be considered for operational screening, statutory boards play a pivotal role not only for the individual officer but for their respective communities. The only tools and guidance available to board members that highlight the importance of graduate education and provide insight to community values are contained within the Community Briefs and Convening Orders. Therefore, the language in these documents needs to reflect community values as accurately as possible.

2. Operational Screening Boards

Though they operate in much the same fashion as statutory promotion boards, operational screening boards serve a different purpose entirely for the TACAIR community and are composed slightly differently. Aviation screen boards are entirely “owned” by the Naval Aviation community. These boards are responsible for screening all aviation officers for selection as squadron department heads, commanding officers, and commanders of major commands. The screening boards’ processes, and most importantly their associated results, are important to the discussion because they offer the only insight available into those values the NAE deems highly desirable for its future leaders.

a. Screen Board Makeup

While the makeup of statutory promotion boards is warfare specialty diverse, an aviation screen board’s is not. The voting members of all aviation screen boards are designated Aviators, Naval Flight Officers, or Aerospace Duty Officers. Contrary to promotion boards, screen boards therefore exhibit little need for Community Briefs because aviation officers are well versed in the Aviation Community’s values. Each community subset of Naval Aviation is represented on a screen board. Rotary-wing, patrol and maritime, and training commands are represented in addition to the TACAIR community. This typical makeup gives each board a robust knowledge base of Naval Aviation’s values.

b. Screening Criteria and Importance of Graduate Education

Unlike statutory promotion boards, the Convening Orders issued for aviation screening boards contain little language as to valued promotion criteria and instead focus on board administrative minutiae. Voting members therefore place greater emphasis on warfare qualifications and operational competence as compared to their statutory board counterparts. The Chief of Naval Personnel’s (CNP’s) response to the question of alignment between graduate education and career milestones contained in the E4SFR reflects this fact. The CNP’s response stated that, for Unrestricted Line Communities, “successful performance in operational tours is the priority and the primary discriminator for promotion to the next grade” (DoN, 2018c, p. 339).

For example, the most recent *FY-19 Aviation Command Screen Board Takeaways* brief provides selection result metrics heavily based upon community valued billets and operational competencies. With respect to graduate education, the same brief emphasizes that an officer's education is used as a discriminating factor in the event of a "crunch" or highly competitive situation between two candidates (PERS-43, 2018, p. 6). This "crunch factor" is continually highlighted throughout the brief as each community's screen results contain a bullet reporting the percentage of those selected who possess a graduate degree (PERS-43, 2018, pp. 9–29). Therefore, graduate education plays a pivotal, discriminatory, and influential, yet understated role even in a warfare-focused selection board process.

D. THE NAVAL PROFESSION'S TENUOUS RELATIONSHIP WITH GRADUATE EDUCATION

The naval profession has historically experienced cyclical patterns with regard to graduate education. Assessment and reform generally occur after large-scale combat operations providing the Navy and Marine Corps team with challenge and opportunity to revisit education assumptions (DoN, 2018c, p. 29). Emerging from the more than decade-long War on Terrorism presents a fresh opportunity for the sea services to assess their educational position. Such an assessment is contained in the *2018 Education for Seapower Final Report* and paints a highly accurate picture of the current and future naval education landscape.

1. Current Naval Profession Educational Values

The results of the E4SFR paint a startling view of an education system that exhibits a "disconnect between what education provides for a thinking, learning, and adapting Navy and Marine Corps, and how the naval culture of the twenty first century views education" (DoN, 2018c, p. 29). Broadly defined, the sea services view graduate education as nothing more than a "check in the block" upward mobility requirement with little to no relevance to operational effectiveness, with supporting quantitative data from military officers and education faculty suggesting the same (DoN, 2018c, p. 29). Years of advice and mentorship to junior and senior officers alike have cemented the notion that a set of orders to a graduate school were to be viewed as a "black mark on an officer's record" (DoN, 2018c, p. 31).

Today's officers thus spent a disproportionate amount of their off-duty time using their own funds to pursue graduate education in an effort to meet promotion gates while taking great pains to not be perceived as abandoning their operational communities (DoN, 2018c, p. 31). The E4SFR concluded that the pressure from these operational communities, or "warfare tribes," can be unyielding in their effort to devalue the proposition of a naval professional's education (DoN, 2018c, p. 30). Yet aviation officers are still tacitly required to earn an advanced degree to have any chance of successful board screenings.

Results from selection boards show that of those officers selected for Aviation Major Command at Sea or Shore, 100% and 86% respectively hold advanced graduate degrees (Baze, 2018a, p. 5). The FY-19 Aviation Command Screen Board show similar results with an overwhelming 71% of those aviation officers selected for command holding a master's degree (PERS-43, 2018, p. 8). Therefore, officers in communities with high operational demands, such as TACAIR, are subject to an environment steeped in hypocritical educational values, as the Navy continues to "prize the tactical and technical level jobs and time at sea to the exclusion of other factors" (DoN, 2018c, p. 31).

2. Graduate Education Initiatives and the Way Ahead

The E4SFR concluded that the current norm of an undergraduate degree and 10 months of accelerated executive graduate study is insufficient to meet the operational and strategic needs of the future Navy and Marine Corps (DoN, 2018c, p. 29). Changes are needed on the graduate education front in order to align the service's strategic needs with an educational framework up to the task of providing highly educated officers. The first step in accomplishing this task is a wholesale policy change with regard to IRGE.

NAVADMIN 263/18 released in October 2018 represents such a policy change. Unambiguous in its message, the updated policy language states, "In-residence education programs provide the best opportunity to mature critical and/or strategic thinking skills" and directs several sweeping changes to naval graduate education (DoN, 2018b).

Graduate education policy changes directed by NAVADMIN 263/18 (DoN, 2018b) include the following:

- Establishing administrative screening boards for due-course officers to determine selection for top-line, key competitive IRGE programs.
- Directing emphasis on compliance by statutory and screening boards to adhere to revised precept language making clear the Navy’s investment expectation in developing future Navy leaders as critical and strategic thinkers through IRGE programs.
- Requiring officers in YG-15 and beyond to graduate from an IRGE program prior to assuming Major Command. Of significant note is that distance learning degree programs will not count towards this requirement.

In remarkably few words, NAVADMIN 263/18 sets forth policy changes that will result in tectonic shifts to the manner in which an officer’s career path and graduate education are managed. The E4SFR concluded that the current education enterprise framework is inadequate to handle such a task and recommended significant changes (DoN, 2018c, p. 11).

3. 2018 Education for Seapower Final Report Recommendations

If NAVADMIN 263/18 represents the desired end state of naval education, then the E4SFR represents the framework with which to attain it. Out of the deliberate and rigorous work undertaken by the Education for Seapower Executive Board, several critical and sweeping recommendations for naval education were made. The board’s recommendations fell into three broad categories—organization, governance, and policy—which are summarized for review in Table 1.

Table 1. 2018 E4SFR Recommendations. Adapted from E4SFR (2018).

<u>Organization</u>	<u>Governance</u>	<u>Policy (selected)</u>
Establish the Naval University to integrate all efforts of Naval Education Enterprise	Institute a single Naval Education Governance Board	Require in-residence, strategically focused graduate degrees of all future URL Flag and General Officers
Establish a senior civilian Chief Learning Officer		Implement new curriculum reviews for all educational institutions
Establish Program Executive Office - Learning	Create a Board of Advisors to act as ex officio members of the Naval Academy and Marine Corps University Boards of Visitors	Require the President, Naval University to develop selectivity standards and admissions requirements for each NU institution
Establish Naval Community College		Require Reporting Seniors to comment on learning objectives as a separate category on officer FITREPS and enlisted EVALS

As of the completion of this project, these recommendations have yet to be implemented. However, the E4SFR provides a clearly defined roadmap to achieve the desired end state of NAVADMIN 263/18. This suggests that the report's conclusions and recommendations portend what the future NEE will look like with an arguably high degree of accuracy.

E. CHAPTER SUMMARY

The NAE is the enterprise-level framework of Naval Aviation connecting the defense industrial base (DIB), resource sponsors, and fleet requirements to each other in an effort to ensure the highest readiness at the most affordable cost. Due to its very nature, the NAE is more business process-focused than military unit-oriented. Effectively

contributing to the efforts of the NAE ensures warfighter success through readiness and demands that NAE stakeholders be fluent in the language of business.

Due-course officers in the TACAIR community are valued NAE stakeholders but are rarely afforded the opportunity to attend an IRGE program from which they could learn such a language. Extensive training time and unique community values prohibit TACAIR officers from attending such programs. At best, a due-course officer may have a narrow Window of Opportunity within which an IRGE opportunity can be sought. This rare occasion demands that the opportunity being provided for IRGE must not be squandered and that maximum value attained from an officer's education experience for the benefit of the NAE and officer alike.

The only way to influence the TACAIR's community values to allow for IRGE opportunities is through language contained within statutory and screening board guiding documents. These documents provide direct communication to voting members of the boards as to the traits deemed desirable for promotion to the next pay grade and operational screening success, thus laying the foundation for the community's future leadership.

Though current educational efforts within the DoN have stagnated and exhibit little connection to strategic objectives, NAVADMIN 263/18 and 2018 E4SFR have provided the guidance, desired end state, and framework for the DoN to implement significant and lasting change.

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III. LITERATURE REVIEW AND SELECTED SOURCE SUMMARIES

Central to answering our research question is the ability to develop an organization's core competencies from its guiding documents. Therefore, the focus of this chapter is twofold. First, we provide a brief overview of the relevant parts of the body of literature on core competencies and endeavor to define more precisely what a core competency is and how one is developed in relation to our research. We leverage industry's working definition of core competence through analysis of Prahalad and Hamel's work *The Core Competence of the Corporation*. Originally published in the 1990 May–June edition of the *Harvard Business Review*, it is considered to be a primary source document on corporate competency development. It serves as a language primer providing tools which we use to translate the NAE's guiding principles into core competencies. We also explore Barry Watts's 2013 *Sustaining the U.S. Defense Industrial Base as a Strategic Asset* in an effort to highlight how the Center for Strategic and Budgetary Assessments utilized Prahalad and Hamel's (1990) work to develop six core competencies for the U.S. military as a whole.

Secondly, we examine DoN guiding documents. Statutory and screening board Convening Orders and Precepts are explained and their purposes highlighted. Additionally, we review secretary of the Navy–approved Community Briefs among other NPC-related board material. Though not to be explored in depth as their breadth is beyond the scope of this thesis, we consider national strategy articles as DoN guiding documents as well and reference them where applicable. Examples include the National Defense Strategy and National Security Strategy. By reviewing the above Navy documents, we explain the important role they play in developing core competencies.

A. LITERATURE REVIEW

The body of literature concerning core competence spans business and military organizations alike. The study of core competence as it is understood today is based on a concept originally espoused by Prahalad and Hamel in regard to corporate resource

management theory (Kawshala, 2017). Loosely defined, a core competency is a unique skill an organization possesses which provides an advantage over the competition (Kawshala, 2017). Often, an organization will have multiple identified core competencies typically numbering no more than five to six (Prahalad & Hamel, 1990; Watts, 2013). An organization with more than six competencies most likely has not performed a thorough job of identifying its core competencies and is thus left with an unmanageable number of competency areas to allocate resources to (Prahalad & Hamel, 1990). Though the general idea of a core competency is relatively easy to comprehend, deriving specific competencies for an organization is an elusive endeavor for many organizations.

Deriving core competencies is a notably difficult task for an organization. Literature regarding deriving core competencies lacks any agreed upon organizational processes that would aid in their identification or exploitation (Javidan, 1998). The difficulty lies in the ethereal nature of an organization's definition of what constitutes a core competency. Core competencies often exhibit path dependency, meaning they stem from an organization's history, know-how, and experience gained over years of operation (Cockell, Martin, & Weaver, 1992; Javidan, 1998; Ljungquist, 2013). The path-dependent nature of core competencies thus complicates the process of defining precisely what a core competency is and is not, for any given organization. Business and military organizations historically struggle with defining core competencies. For example, though the Department of the Army and the DoN both use the notion of core competencies pervasively in organizational dogma, they share a lack of common definition of the component pieces of core competencies, resulting in ineffectual implementation (Dunning, 2013; Hayes, 2008). Further, the DoD as a whole is not immune from a lack of understanding how to define core competencies as highlighted by the Government Accountability Office (GAO). The 2003 GAO report on DoD implementation of core competency framework vis-à-vis *OMB Circular A-76* concerning commercial activities concluded that the department's processes were hampered by a lack of adequate understanding and definition of the term *core* due to its broad and subjective nature (Government Accountability Office, 2003). Given the difficulty in defining an organization's core competencies, a discussion on the subject is

therefore best focused on discussing their distinguishing characteristics rather than specific organizational applications.

1. Core Competency Components

The literature suggests that core competencies share similar components and characteristics. Prahalad and Hamel (1990) offered that a core competency is a “company’s collective knowledge about how to coordinate diverse production skills and technologies” (p. 1). Authors in refining this definition seem to agree that core competencies are the result of a firm’s combined resources, capabilities, and competencies (Javidan, 1998; Kawshala, 2017; Ljunquist, 2007), but the interrelations and definitions of these component pieces are left heavily debated. In response to Prahalad and Hamel (1990), Javidan (1998) suggested a competency hierarchy composed of resources, capabilities, and competencies as depicted in Figure 5 (p. 62).

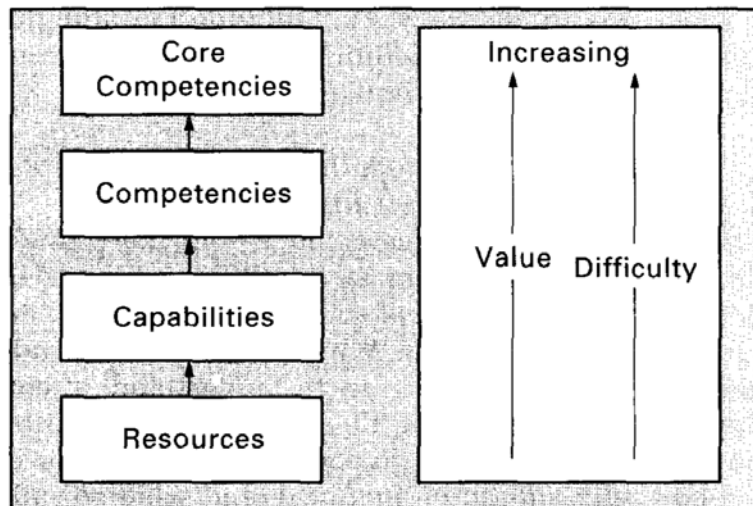


Figure 5. Competency Hierarchy. Source: Javidan (1998).

Ljungquist (2007) in turn argued that Javidan’s (1998) hierarchical relationships could not be verified and therefore de-valued the hierarchical relationship in favor of a flatter model. Ljungquist proposed a relationship where the fundamental components of a

core competency share the same organizational value in contrast to Javidan's (1998) work (Ljungquist, 2007, p. 400). However, Ljungquist's model does share the same high organizational value placed on core competence and is thus aligned with Javidan's conclusions in that regard.

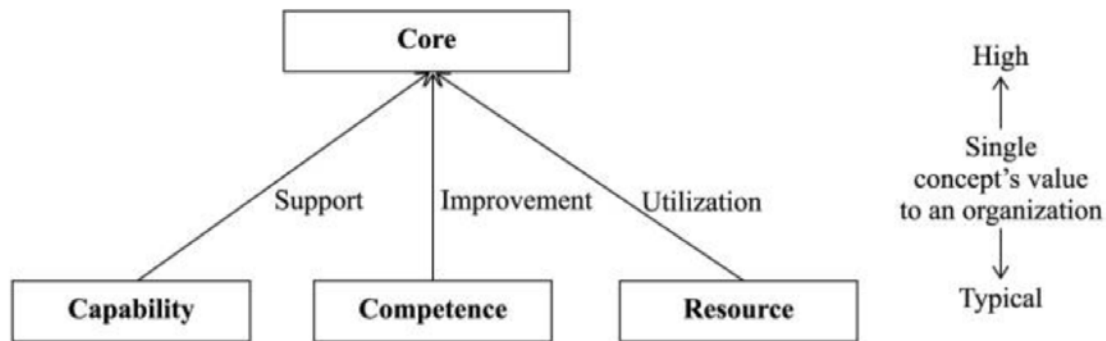


Figure 6. Ljungquist's De-valued Core Competency Hierarchical Model. Source: Ljungquist (2007).

Kawshala (2017) complements Ljungquist's (2007) model with the addition of a core competency's contributing relationship to competitive advantage and subsequent growth of a firm.

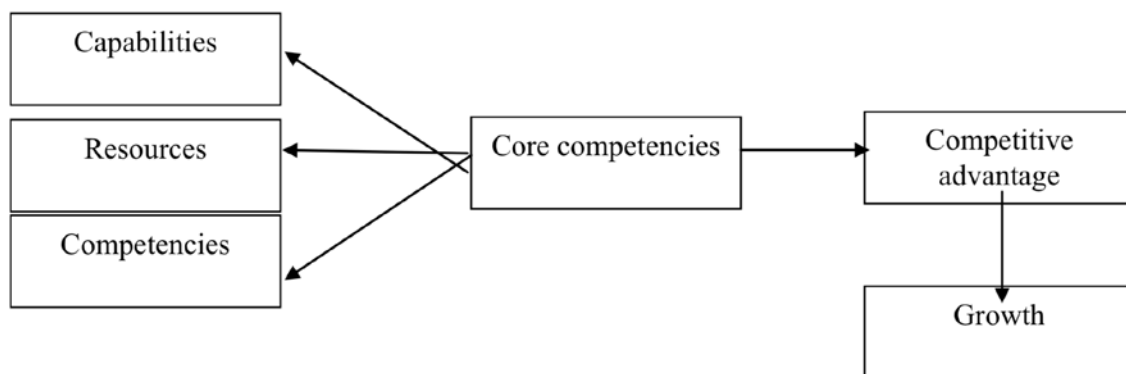


Figure 7. Kawshala's Core Competency Model. Source: Kawshala (2017).

Regardless of the relationship between capabilities, resources, and competencies to a core competency, all three models share the same implication that a core competency is of the highest value to an organization and likely directly contributes to its overall success. Thus, for the purposes of this study, we conclude that a core competency is comprised of three components, resources, capabilities, and competencies all having equal relative value and directly contributing to a core competency's overall organizational value.

2. Core Competency Characteristics

The second attribute of core competencies, which allow them to be discussed across organizations, is their ability to meet a set of criteria which we refer to as a core competency's characteristics. For a core competency to be considered valid, Prahalad and Hamel (1990) suggested that it meet certain criteria. Prahalad and Hamel's (1990) work has been used as a baseline that other researchers have used as the basis for their own criteria generation (Cockell et al., 1992; Watts, 2013). Therefore, much like an organization's unique identification of a core competency, each organization likely has a set of criteria by which to validate its core competencies unique to the organization's function. Thus, a core competency need not share identical validation criteria, but all core competencies share the requirement to be held to a battery of qualifying criteria.

Last, a discussion on core competencies is incomplete without addressing how they are used within an organization. Core competencies are not standalone concepts for an organization. For an organization to realize any benefit from its core competencies, they must exhibit traceability to an organization's strategic focus and be applied to the appropriate business area (Cockell et al., 1992; Prahalad & Hamel, 1990). The method most appropriate for this is significant reliance on interconnectedness of business units and cross functional teams within an organization (Cockell et al., 1992; Javidan, 1998; Prahalad & Hamel, 1990). Additionally, core competencies are not stagnant; they must constantly be revisited as a corporation grows or adds new capabilities. In that sense, well derived core competencies should exhibit characteristics of "double loop" learning as pointed out by Hays (2008) in his study of operational leader development within the Navy (p. 86).

That is to say, core competencies must always be revisited, questioned, and adapted as required in order to be of use to an organization.

In summation, the derivation of core competencies is a laborious and often nebulous process requiring a great investment of time and resources. When correctly derived and applied to a corporation's strategic vision, however, core competencies become a powerful tool to wield, which often results in organizational success. Given their importance to our research, the concepts contained within the following sources have been summarized to provide the reader enhanced understanding of not only the work itself, but how we intend to apply it to the Naval Aviation framework.

B. SELECTED SOURCE SUMMARIES

1. The Core Competence of the Corporation

Prahalad and Hamel's 1990 study of technology companies GTE and NEC is widely regarded as seminal work in identifying corporate core competencies (Watts, 2013, p. 6). In the beginning of the 1980s, GTE was positioned well ahead of NEC within the industry with nearly \$10 billion in sales (Prahalad & Hamel, 1990, p. 2). By decade's end, however, NEC's market share had eclipsed GTE, and the company was reporting approximately \$22 billion in sales compared to GTE's \$16.46 billion (Prahalad & Hamel, 1990, p. 2). Though both companies had very similar business portfolios, NEC outperformed GTE; the obvious question was why.

Through their research, Prahalad and Hamel (1990) determined the major reason for NEC's success was its choice to view itself via its core competencies. Rather than focus on end product, NEC chose to focus its lines of effort on its self-identified strengths, later known as core competencies, and develop a "strategic architecture" around those strengths (Prahalad & Hamel, 1990, p. 3). Restructuring its business strategy into a portfolio of competencies rather than individual business allowed NEC to slingshot past GTE and establish dominant market share (Prahalad & Hamel, 1990, p. 2).

a. *Definition of Corporate Core Competencies*

Core competence at the organizational level according to Prahalad and Hamel (1990) is “communication, involvement, and deep commitment to working across organizational boundaries” (p. 5). Further, a core competence provides a harmonizing effect vertically and horizontally within an organization and delivers value (Prahalad & Hamel, 1990, p. 5). As the authors state, when utilized properly, core competencies are the “glue that binds existing business” as well as “the engine[s] for new business development” (Prahalad & Hamel, 1990, p. 6).

Core competencies are also industry agnostic. Prahalad and Hamel (1990) identified several other companies, Honda and Canon among them, which utilized a “portfolio of competencies” (p. 4) throughout the 1980s to great success as compared to their rivals. Being industry agnostic is a powerful characteristic of core competencies, which allow them to be used in nearly any other industry, commercial, or military setting. Rapidly identifying and leveraging an organization’s core competencies is therefore of paramount importance should the organization desire to be successful.

b. *Testing Core Competencies*

Due to their agnostic nature, core competencies must follow a set of guiding principles in order to be applicable across a vast commercial and industrial space. Prahalad and Hamel (1990) offer three tests which can be used to determine a core competency within an organization.

The first test is that a “core competence provides potential access to a wide variety of markets” (Prahalad & Hamel, 1990, p. 7). Here the authors give the example of a company whose core competence might be in display systems, allowing them to enter all manner of markets where displays of varying sizes might be required such as computers, televisions, and automotive applications. The second test is that a “core competence should make a significant contribution to the perceived customer benefits of the end product” (p. 7). In this case, the competence is customer-focused and designed to add value to the end user experience. Lastly, Prahalad and Hamel (1990) state that “a core competence should be difficult for the competitors to imitate” (p. 7). While a competitor may be able to

occasionally duplicate an end result, Prahalad and Hamel proffer that it should be difficult or impossible for that same competitor to recreate the core competence that produced that end result.

The three traits of core competencies, *access to markets*, *perceived customer benefits*, and *imitation difficulty* have stood the test of time since being originally published. We use them in this paper as a Rosetta Stone of sorts, which will allow us to apply these industry-accepted standards of competence to NAE value streams, ultimately identifying core competencies within the NAE for use in validating its educational needs.

2. Sustaining the U.S. Defense Industrial Base as a Strategic Asset

Utilizing Prahalad and Hamel's (1990) rules of thumb for determining a corporation's core competencies is a partial solution to the problem of applying their research to a military context. In order to apply their research for military applications, further study is required. Watts's 2013 study for the Center for Strategic and Business Assessments provides an excellent example of such an application. Examining his methods for applying Prahalad and Hamel's rules to the United States military at large provides a road map for usage within our study and proves that Prahalad and Hamel's work can be utilized for military applications.

Watts (2013) used Prahalad and Hamel's (1990) work to establish a linkage between military core competencies and industrial base competencies. His research is a powerful example of the universal applicability of Prahalad and Hamel's work. Watts establishes the precedent we intend to leverage for our research. Watts begins by highlighting that current business literature demands that a list of an organization's core competencies must remain relatively short, ideally in the five to six range. His suggestion is a take on the old adage that if everything is a core competency, then nothing is a core competency. Watts proposes six military competencies, which have tightly interrelated characteristics with the DIB. Watts utilizes a time horizon of 10–20 years in the future and suggests the following six military competencies will have dominant effects to U.S. geopolitical relationships:

- Global Non-Nuclear Precision Strike

- Flexible, effective nuclear forces
- Projecting and sustaining forces sufficient to conduct combined-arms campaigns at the operational level of war
- Access to and freedom of action in the global commons, especially on the world's oceans, in orbital space, and across the electromagnetic spectrum
- Cryptologic Enterprise
- Realistic combat training. (p. 9)

Using Precision Strike as an example, Watts (2013) argues that it meets all required criteria of Prahalad and Hamel's (1990) work to be classified as a core competency. Precision Strike can be thought of as the ability for military forces to engage an adversary across a wide range of environments with high accuracy. It is by default a highly complex, technologically demanding, and expensive manner in which to influence an adversary's behavior. Current examples of precision strike weapons include the Joint Direct Attack Munition, GPS-enabled weapons, and any number of laser designated kinetic munitions, all of which are designed to minimize collateral damage via high accuracy performance.

Watts's (2013) example of Precision Strike as a military competency holds true when compared to Prahalad and Hamel's (1990) work. Precision Strike is applicable across a wide range of combat situations, as precision munitions are used in every operational environment from urban, mountain, sea, and air domains. It also provides a much greater value than the alternatives, which are "dumb" munitions. Non-precision munitions such as glide bombs, rockets, and gun strafing do not offer the collateral damage mitigation controls that precision munitions do. Lastly, due in large part to their complexity, expense, and demanding training regimen, precision munitions are not easily imitated by adversaries. Thus, Precision Strike meets or exceeds all three of Prahalad and Hamel's (1990) criteria to be considered a core competency for the military.

Watts (2013) argues that in order for the DIB to support his proposed military core competencies, the DIB's own competencies must align with the military's. Table 2 illustrates these linkages and alignments between competencies.

Table 2. Military and DIB Competencies. Adapted from Watts (2013, pp. 9, 14–15).

<u>Military Competency</u>	<u>DIB Competency</u>
Global Non-nuclear Precision Strike	Precision weapons, including missiles for both strike and defense
Flexible, effective nuclear forces	Low-signature platforms such as stealthy air vehicles, both manned and unmanned, and nuclear submarines
Projecting and sustaining forces sufficient to conduct combined-arms campaigns at the operational level of war	Global ISR
Access to and freedom of action in the global commons, especially on the world's oceans, in orbital space, and across the electromagnetic spectrum	Integrated battle networks that marry ISR with robust command, control, and communications
Cryptologic Enterprise	Skills, procedures, tools, and organizations for dominating the electromagnetic spectrum
Realistic Combat Training	Large-scale system and network-architecture integration

Table 2 shows that each of the DIB competencies support the military competency either directly or indirectly. There is no requirement for a one-to-one relationship between competencies. Prahalad and Hamel's (1990) test for defining a core competency again holds true for the DIB competencies. For example, Global Intelligence, Surveillance, and Reconnaissance (ISR) is a competency that is exceedingly difficult to imitate, grants access to a wide variety of markets (in this case operational domains), and makes significant contributions perceived or otherwise to the end use of the service (Prahalad & Hamel, 1990).

Using Watts's (2013) work as an example, we therefore intend to utilize the NAE's guiding documents to derive NAE-specific core competencies and provide recommendations for their utilization.

3. Core Competencies and Other Business Concepts for Use in DoD Strategic Planning

In 1992, the Defense Nuclear Agency sponsored the Science Applications International Corporation to prepare a report on linkages between DoD core competencies and business concepts to be used in strategic planning efforts. Cockell et al.'s (1992) goal was to provide both the director, Net Assessment, and the Defense Nuclear Agency a glossary that translated business vernacular to applicable DoD concepts. Within the scope of this project, Cockell et al.'s (1992) work further highlights applying the concept of core competencies across a wide spectrum of military operations while maintaining interwoven ties to business processes.

Cockell et al. (1992) stated that DoD core competencies should possess the following five characteristics (p. 2):

- Are complex combinations of technological, production, and operation skills
- Result from years of operational experience and technical know-how of individuals and organizations (i.e. "path dependent"), which make them difficult to duplicate
- Are key for determining outcomes of military competitions
- Apply to many missions and to most, if not all, services and commands
- Have the ability to influence force postures, plans, and actions of adversaries by discouraging competition or imposing major costs on them if they chose to compete

Additionally, their work introduces the business concept of a business area. According to Cockell et al. (1992), a business area is a "combination of products and markets through which a firm's core competencies are sold" (p. 6). Therefore, it can be understood that a business area is where the focus of effort of core competencies is placed.

Cockell et al. (1992) further state that “analogously, a national security business area is a mission area through which DoD core competencies are made operational” (p. 6).

Cockell and his colleagues offer us a pathway then, which we can use to demonstrate a viable link between derived core competencies and mission areas in which they can be applied. We intend to use this ability to demonstrate how NAE-derived core competencies can be utilized in a manner which is beneficial to NAE business areas.

4. 2018 Education for Seapower Final Report

The DoN’s *Education for Seapower Final Report* was released in December 2018 representing nearly a yearlong study into the Navy’s current education landscape. The E4S Executive Board conducted comprehensive and in-depth analyses of the Navy’s flagship educational institutions spanning accession sources such as the United States Naval Academy, Reserve Officer Training Corps, and Officer Candidates School to advanced education opportunities found at the Naval Postgraduate School, the Naval War College, and Flag/General Officer education programs.

The scope of the E4S study was extraordinarily broad. The E4S Executive Board engaged with leaders and faculty of the above institutions, as well as the Navy’s sister services schools. Additionally, the board engaged in discussions with peer civilian institutions and industry partners to discern a holistic picture of the state of the Navy’s current educational enterprise system.

The E4S study used quantitative, qualitative, and in some cases mixed-method analysis research methods. Data analysis was concentrated on five external sources: organizational questionnaires, previous studies relevant to DoN education, E4S interviews, professional journal articles, and surveys of current faculties of naval education institutions and active duty naval officers (DoN, 2018c, p. 44).

Quantitative data for the study was obtained from naval education institutions, service personnel systems, and outside agency submissions (DoN, 2018c, p. 16). The quantitative data submitted was comprised of attendance rates, academic performance, and promotion rates (DoN, 2018, p. 16). Qualitative data for the study was in the form of faculty

and officer survey results, as well as interview responses (DoN, 2018c, p. 16). Both open-ended and structured responses were utilized during the survey process. Lastly, articles from premier naval journals was qualitatively analyzed and inferences drawn from the results to gain the perspective of naval practitioners with respect to education (DoN, 2018c, p. 16).

E4S analysis concluded in part that the “DoN’s culture places greater value on operational experience rather than on education” (DoN, 2018c, p. 44). Analysis further revealed four key takeaways with regard to the Navy’s educational system. Data analysis inferred that there was a lack of a coherent education strategy, individual education institutional strengths were not fully leveraged, education was not uniformly or consistently valued across warfare communities, and that there was a lag between warfighting demands and education programs designed to meet warfighter needs in order to maintain maritime superiority (DoN, 2018c, p. 44). The data analysis led the E4S Executive Board to offer specific recommendations in the areas of organization, governance, and policy.

With regard to organization the E4S Executive Board provided four significant recommendations:

- Establishment of a Naval University Education Enterprise system to be headed by a three-star naval officer dual-hatted as the president of the Naval War College (DoN, 2018c, p. 63)
- Creation of a civilian Chief Learning Officer (CLO) position within the DoN headquartered at the Pentagon responsible for devising naval education strategy and conducting periodic strategic assessments, acting as the Budget Submitting Office for all program lines with regard to education, submitting recommended policy documents, and coordinating with public and private educational systems and private-sector learning offices in order to maintain a naval connection with leading edge educational practices (DoN, 2018c, pp. 63–64)

- Establishment of a Program Executive Office, Naval Learning Systems (PEO-L) under the command of Commander, Naval Air Warfare Center–Training Systems Division (NAWC-TSD) to act as the “unified acquisition and execution office for all education systems required by the President, Naval University” (DoN, 2018c, p. 64)
- Creation of a Naval Community College to address the needs of training, education, and certification of enlisted Sailors and Marines (DoN, 2018c, p. 64)

With regard to the Naval Education Enterprise governance pillar, the E4S board recommended the institution of a single Naval Education Board headed by the secretary of the Navy, co-chaired by the CNO and CMC with rotating four-star fleet commanders to serve as a governing function for the Naval University (DoN, 2018c, p. 64). Additionally, the board recommended the creation of a Board of Advisors made up of “distinguished persons” with the “primary duty of providing oversight for the SecNav and for providing support, guidance and advice for the entire educational enterprise” (DoN, 2018c, p. 65).

Lastly within the policy pillar, the E4S Executive Board recommended 12 sweeping changes or additions to existing policy designed to support their organizational and governance courses of action (DoN, 2018c).

The E4SFR provides the most current, applicable, and comprehensive analysis of the Navy’s current educational landscape available. There is no other single document in existence which provides the level of holistic insight, exacting granularity, and robust analysis offered by the E4SFR. The work and recommendations of the E4S Executive Board represent nothing short of a road map for the future of naval education. As such, the E4SFR is a seminal artifact for any discussion of the Naval Education Enterprise.

C. NAVY GUIDING DOCUMENTS

1. Secretary of the Navy Precepts

For each fiscal year’s statutory promotion boards, the secretary of the Navy publishes a precept memorandum. This document provides universal guidance to all boards

held during the fiscal year. It offers a general framework of board proceedings and expectations, and most importantly directs board members to comply with each specific board's Convening Order. This document is considered a direct order to board members originating from the highest civilian office within the Navy. Board members are therefore duty bound to understand and adhere to follow on guidance contained in the Convening Orders.

2. Secretary of the Navy Board Convening Orders

For each fiscal year's specific pay grade statutory promotion board, the secretary of the Navy publishes a Convening Order. This document differs fundamentally from the SecNav precept in that it applies only to a specific pay grade's promotion board for that fiscal year. For example, over the previous three years the Secretary of the Navy has promulgated an FY-18, 19, and 20 Convening Order for each of the O-4 through O-6 Line and Staff promotion boards. To manage scope, this research project will focus solely on the previous three Active Duty O-5 Commander Line Officer Convening Orders.

Whereas the precept message is a global statement intended to guide generic board processes, the Convening Order acts as a vehicle to convey the intentions of the secretary of the Navy directly to promotion board members. As is the case with precept message, the Convening Order is considered a binding, legal order to board members from the secretary of the Navy and to which board members must adhere.

The Convening Order contains within it the secretary of the Navy's definition of what is meant by Best and Fully Qualified. The secretary's standards for best and fully qualified define for the board members the specific acumen, skill sets, experience, and leadership traits, which shall be used to compare promotion candidates to one another. In a very real sense, the Convening Order is the embodiment of the desired traits of the Navy's future leadership. When there is doubt in a board member's mind as to promotion potential of a candidate the Convening Order serves as the answer to that question and is referenced often in board proceedings.

Convening Orders further delineate community-specific traits that are deemed desirable. For example, each Convening Order outlines valued skills within officer specialties such as Engineering Duty Officer, Foreign Area Officer, Public Affairs Officer, and the Intelligence communities. Additionally, the Convening Order will contain language as to non-specialty traits that are considered highly valuable. As an example, the previous three Convening Orders for the O-5 promotion board have contained sections highlighting the value of officer graduate education, innovation, and efficiency contributions.

As board proceedings conducted at NPC are closed in nature, the community-at-large has very little transparency into each board's proceedings. Because the Convening Orders are one of the few board documents that are made publicly available, they are our best source of data as to how promotion decisions are made and therefore serve a valuable purpose to our research.

3. FY-20 Active-Duty Line Community Approved Secretary of the Navy Community Brief

In contrast to the Secretary of the Navy Precept and Convening Orders, the approved community briefs offer board members exacting granularity as to each specific warfare community's values and career progression. The briefs are generally prepared by leaders and career management experts within each specific field. Typically, community briefs are provided each fiscal year ensuring that a community's values remain current and applicable to board members.

Within the brief each community delivers information that would be pertinent to promotion board members. Two significant pieces of information are provided from each community. The first is a career progression timeline.

The career progression timeline delineates a typical 30-year time frame spanning from an officer's initial accession until statutory retirement. The timeline depicts operational requirements within the community. Initial training, sea and shore rotation, and major command time periods are often seen on the timelines. Additionally, the career timelines also highlight two further key pieces of information.

In addition to operational flow, the career progression timeline also depicts when an officer can expect promotion and screen boards to occur, as well as suggest “opportunity times” where an officer might be able to attempt graduate education. These two data points combined offer the “best fit solution” of where an officer may have time to pursue non-operational endeavors such as graduate education.

The second critical insight contained within the community briefs are the individual community values. It is here where community managers are able to provide an executive summary to board members as to what traits the community values. This is a crucial means of communicating a community’s values as an officer from an outside warfare specialty is not an expert in another warfare community’s value schema.

Community values for the Aviation Officers are further broken down into “valued achievements” prior to attaining the ranks of Lieutenant Commander, Commander, and Captain (Naval Personnel Command, 2019a). This method provides great granularity and specificity to board members regarding those traits deemed desirable by the community for promotion based on rank achievements and expectations.

As is the case with the Convening Orders, these community briefs offer insight into promotion board proceedings and are a valuable source of research data. The briefs and community manager contributions contained therein reflect secretary of the Navy–level approved community values that can be used to determine a community’s core competencies.

4. Aviation Screen Board Takeaways and Lessons Learned

As part of the aviation screen board process, the board president is responsible for drafting “lessons learned” or “takeaway” briefs, which encapsulate high level screen data from the board proceedings. These briefs are made available to the public and reside on NPC’s website. This process differs from the statutory screen boards because their boards do not publish screening data at the level of granularity that the aviation screen boards achieve.

The aviation community makes available lesson learned data from each of its three screen boards. Those boards screen officers to fill positions in the department head, Command, and Major Command roles. These roles correspond to the O-4, O-5, and O-6 pay grades respectively. The briefs typically contain aggregate aspects of the screen group's professional backgrounds. Attributes such as attaining certain warfare qualifications, Joint Professional Military Education (JPME), joint duty, and graduate education are broken down between screened and non-screened groups. Accordingly, these briefs offer great insight across a wide variety of experience variables that can be used to infer whether certain qualifications aid in individual selection success.

IV. CORE COMPETENCY DERIVATION

Core competencies allow organizations to differentiate themselves from their competition through sustained, superior competitive advantage and includes concepts such as collective learning or expertise, often manifested in the combining of unique skills and technology to produce a distinctive and superior product (Prahalad & Hamel, 1990). This chapter presents our suggested core competencies and provides traceability to the source documentation we used in their derivation.

A. METHOD

There are several acceptable methods available with which to derive an organization's core competencies. For the purposes of this study, we chose to follow the method presented by Lahti (1999) who argued for the existence of Individual Level Core Competencies (ILCCs) (p. 64) and Organizational Level Core Competencies (OLCCs) (p. 61). Lahti (1999) proposes that the methods used to derive core competencies is contingent upon the individual needs and characteristics of each organization. However, Lahti (1999) suggests that there are six generally accepted steps in determining core competencies: "(a) reviewing current documentation (e.g., job descriptions and company policies, strategy, mission and vision statements), (b) defining what is to be accomplished, (c) laying out the process and criteria for collecting information, (d) collecting information, (e) evaluating the information for accuracy, importance and representativeness, (f) and determining the final ILCCs" (p. 68).

Due to time constraints and lack of transparency associated with the promotion and screening board processes, we have based our method on an in-depth review of current documentation in the form of the previously discussed guiding documents. Using Lahti's (1999) proposed method, we derived six individual and three organizational core competencies. We concur with Lahti's (1999) argument that "the most effective use of core competencies involves integrating the ILCCs with the OLCCs" (p. 70). As such, we present suggested core competencies for both the individual due-course TACAIR officer and TACAIR organization. Figures 8 and 9 depict the traceability to source documentation we

used. We acknowledge that given more time, resources, and access, an alternate method may be more appropriate and potentially yield different results.

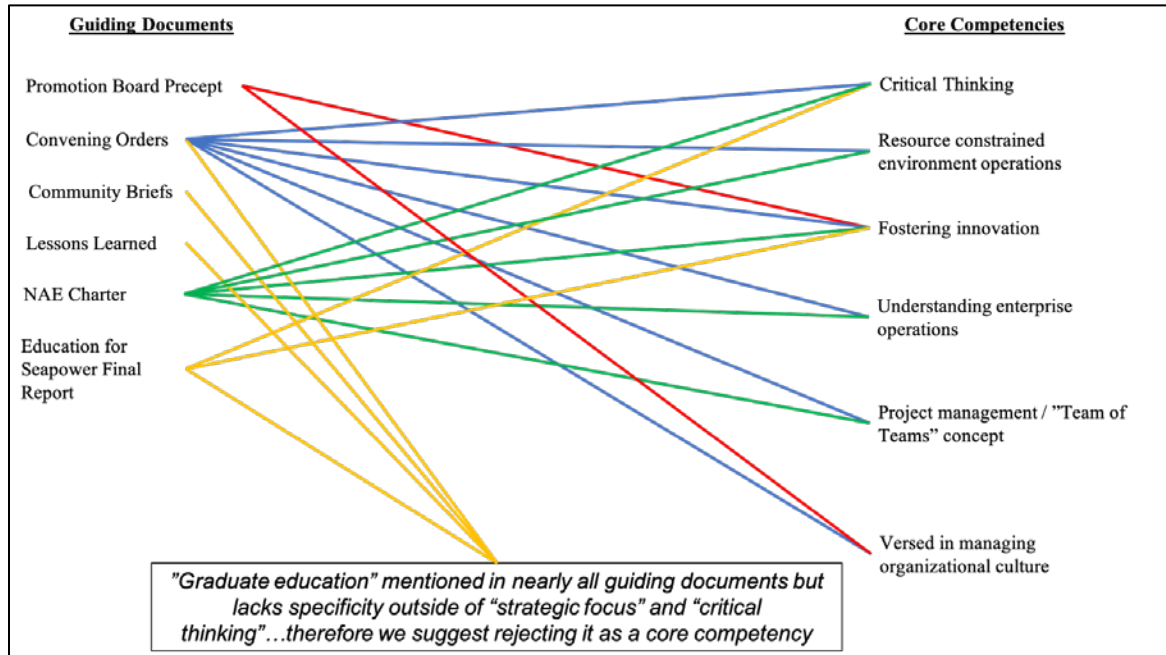


Figure 8. Individual-Level Core Competency Traceability

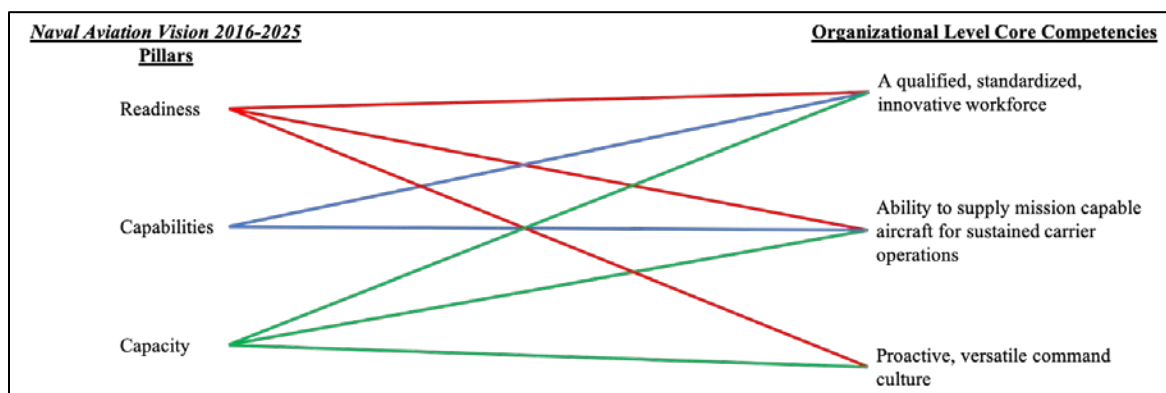


Figure 9. Organizational-Level Core Competency Traceability

B. INDIVIDUAL-LEVEL CORE COMPETENCIES OF THE COMMANDING OFFICER OF A TACAIR SQUADRON

Lahti (1999) argues that “ILCCs are the key strengths that each individual within an organization possesses and demonstrates” (p. 64). In a TACAIR squadron setting, we focused on the commanding officer’s (by definition a due-course officer) needs to appropriately support and exploit the competencies of the squadron itself. Within that scope, we derived and propose the following six ILCC for a due-course TACAIR officer:

- Critical thinking
- Resource constrained environment operations
- Fostering innovation
- Understanding enterprise operations
- Project management/“team of teams” concept
- Versed in managing organizational culture

We suggest that these six competencies allow a TACAIR squadron’s commanding officer to meet the requirements he or she is responsible for, ultimately aiding in fulfilling the needs of the NAE.

1. Ability to Think Critically

Critical thinking⁴ allows one to skillfully analyze, assess, and reconstruct the required details for a non-biased solution, or communication. Commanding officers require this ability to be selected to their commander pay grade. Possessing this core competency is so highly regarded in determining qualification for promotion that it has been specifically mentioned in every O-5 promotion board Convening Order for the last three years:

⁴ Much has been written on the topic of critical thinking, and debate on its precise definition pervades business, academic, and military circles alike. Therefore, in an effort to avoid treating it merely as a buzz word and continue to limit the scope of this paper, we shared in the approach used by the Education for Seapower Executive Board in considering critical thinking as “an educational approach wherein a foundation for thinking, examining, analyzing, discerning, deciding, and acting is established and continuously developed” (DoN, 2018c, p. 15).

“Officers fully qualified for promotion demonstrate an appropriate level of ... critical thinking” (Stackley, 2017, p. 3; Woods, 2018, p. 3; Woods, 2019, p. 3). While warfighting values are understood as essential, the commanding officer needs the ability to think critically over the air and ground domains to fight effectively.

Additionally, “the NAE is focused on optimizing all processes required to ensure achievement of required levels of readiness and sustainment within both active and reserve Navy and Marine Corps aviation forces” (Shoemaker et al., 2015, p. 2). This broader perspective contained within the *NAE Charter* of optimizing and ensuring achievement of the mission makes critical thinking imperative. Not only does critical thinking focus the commanding officer’s efforts and decisions, it also allows one to anticipate potential consequences to peripheral commands.

Critical thinking is essential not only to current operations, but also to maintaining the competitive advantage of future Naval Aviation forces. The E4SFR concurs in stating that “much greater emphasis on strategic education and critical thinking for greater lethality, partnership, and reform is required for the future” (DoN, 2018c, p. 5). This document emphasizes in a significant manner that a critical thinking ILCC is inextricably linked to the progress of the Navy as a whole.

2. Resource-Constrained Environment Operations

In 2017, the Honorable Richard Spencer, secretary of the Navy, spoke on resources and environment in a *Defense News* interview, saying,

It truly is a balance. We are living in a resource-constrained environment, but that is not an excuse. That is something we have to deal with proactively. Ask the people, go down to the deck plates and ask if we can do anything smarter or better, [they’re] the ones actually facing the situation. Let us [the leadership] know how we can improve it. (*Marine Corps Times*, 2017)

His statement was a challenge to naval leadership.

We define a resource-constrained environment as one in which personnel, material, and funding levels are at a level that precludes the completion of a mission or task as it normally would have been executed. An extreme example of a resource-constrained

environment is the budget sequestration in 2013, which affected the Department of Defense in all three of these categories: personnel, material, and funding.

Similar to the requirement of demonstrated critical thinking ability, the past three years of promotion board Convening Orders require that “officers fully qualified for promotion demonstrate an appropriate level of ... management acumen, grounding in business practices, and resourcefulness” (Stackley, 2017, p. 3; Woods, 2018, p. 3; Woods, 2019, p. 3). Budgets are not blank checks, and resources have a finite limit. Sustainable operations require smart stewardship by leaders. Their management of assigned funds, aircraft, and tools determines both future and current operations. We argue that officers must understand how to operate in a resource-constrained environment in order to fulfill the needs of the NAE and meet the intent of the Convening Order requirements.

In addition, leaders must adapt to the dynamic nature of resources. The NAE reminds leaders that “the strategic planning process is flexible. It allows leadership to respond to internal and external pressures while remaining focused on investments and efforts needed to meet warfighting requirements in a fluid fiscal environment” (Shoemaker et al., 2015, p. 3). In addition to the budget sequestration of 2013, Naval Aviation has had to contend with ongoing rounds of continuing resolution budgetary proceedings. This is a further example of the fluid fiscal environment faced by due-course TACAIR officers as discussed in the 2015 *NAE Charter*. It appears that fiscal certainty for a prospective commanding officer is anything but. Therefore, having a solid understanding of resource management in a constrained environment allows TACAIR officers to identify those resources which are to be best supported in order to optimize operational performance.

3. Fostering Innovation

Fostering innovation⁵ means encouraging new ideas and concepts and making a commitment to be adaptable when there is a change. In his *Department of the Navy Innovation Vision*, former Secretary of the Navy the Honorable Ray Mabus said that “now is the time ... to foster a culture of innovation that unleashes the ingenuity intrinsic in our people. Innovation has been our tradition and it must also be our future” (DoN Strategy and Innovation, n.d., p. 3). It is clear that understanding the importance of innovative methods is a secretary level priority and demands the attention of due-course officers.

Innovation is not a new concept or idea, but a trait written into the required attributes of due-course officers. The previous three years of O-5 promotion board Convening Orders state, “Professional attributes include adaptability, intelligent risk-taking, ... [and] innovation” (Stackley, 2017, p. 3; Woods, 2018, p. 3; Woods, 2019, p. 3). Similarly, the promotion and selection board precepts released by the secretary of the Navy for the past three years echo the need for officers to be versed in innovation skills in stating, “When reviewing an officer’s potential for the next higher grade, consider that the Navy benefits when the officer corps possesses a broad spectrum of experience, background, perspective, innovative talent” (Mabus, 2016, A-4; Spencer, 2017, A-4; Spencer, 2018, A-4). Knowing how to create a culture that fosters innovation and embraces its ideals is a critical and required individual trait that has far reaching effects.

The NAE also views innovation as an important concept, and as such, has established a fleet action team designed around innovation. The NAE is charged with delivering an “Ongoing Continuous Process Improvement (CPI) focus across Naval Aviation” (Shoemaker et al., 2015, p. 7). This effort is an example of an enterprise level effort at fostering and sustaining innovation. While only a fractional part of the NAE as a

⁵ Here again we address a concept that is highly interwoven in education, business, and military strategy discussions. Innovation can take on an intangible quality where everyone knows they need it but fail to define precisely what innovation means to them or their organization. As in our approach to critical thinking, we chose to limit the scope of innovation to that which is referred to in the E4SFR and considered innovation to be those effects that are “spawned by the synergy of disparate ideas spun into new—and often disruptive—concepts and capabilities” (DoN, 2018c, p. 28).

whole, a TACAIR squadron plays a vital role in its effectiveness, and due-course officers must understand their role in improving naval processes at the enterprise level.

Lastly, the E4SFR makes clear that innovation is a requirement that must be delivered via the graduate education process in order to maintain a sustained, competitive advantage over our adversaries. The report concluded that “the tactical and operational innovation in the warfare communities of the future will require continuous education in the Joint Force and military capabilities and strategy to maintain a competitive advantage over potential adversaries” (DoN, 2018c, p. 33). Thus, the core competency of fostering innovation exhibits clear traceability to multiple source documents with significant emphasis placed upon its mastery and implementation having direct ties to operational effects.

4. Understanding Enterprise Operations (NAE/Convening Orders)

This core competency is derived directly from the mission and strategic objectives of the *NAE Charter*. The Naval Aviation community has been able to sustain required readiness for tasking via metrics-based enterprise operation methods. We have suggested that a squadron can be viewed as a small business unit within the larger NAE framework. Therefore, it is incumbent upon due-course officers to understand enterprise operations as they pertain to day-to-day squadron operations and extra-squadron efforts alike. Fully understanding the benefits of enterprise operations contributes directly to the stated objective of the *NAE Charter* ensuring high readiness levels at the best possible cost (Shoemaker et al., 2015). Further, we argue that a due-course officer versed in enterprise operations will be better armed to think critically, foster innovation, and manage team efforts within his or her unit.

Convening Orders from the previous three years also signal high demand and value of understanding enterprise operations. Enterprise operations are a deeply rooted business acumen practiced in many industries. FY-18, -19, and -20 Convening Order language unambiguously highlight the need for this competency when stating that officers who are fully qualified for promotion demonstrate an appropriate level of grounding in business

practices and management acumen (Stackley, 2017; Woods, 2018, 2019). We contend that understanding enterprise operations fulfills that requirement.

The operations, safety, administration, and maintenance departments in a TACAIR squadron all have tracking functions inherent to them. Each generates useful enterprise-like data metrics based on their functions, which can be used to enhance desired outputs and squadron operational effectiveness. With this in mind, commanding officers versed in enterprise operations should know what to ask for and why it is important. The NAE does this routinely in using “metrics to assist in driving readiness gap closure, and apply continuous process improvement with accountability for measurable results” (Shoemaker et al., 2015, p. 7). TACAIR commanders can use the same processes to develop more efficient and effective operations.

5. Project Management/“Team of Teams” Concept

We define the project management core competency as skill that allows individuals to embrace and implement a team of teams concept. Made popular in his work of the same name, the “team of teams” concept discussed by retired Army General Stanley Chrystal is the result of the natural progression of team management, was born out of lessons learned during combat operations, and is conceptualized in Figure 10 (McChrystal, Collins, Silverman, & Fussell, 2015). Contemporary core competency and project management literature is littered with discussions on the importance of competencies being cross functional between teams within an organization. Prahalad and Hamel (1990) also speak specifically about the importance of cross-divisional teams as a required component of success. Present project management concepts share these ideals and are based around the formation, management, and leadership of teams like Integrated Product Teams (IPTs) or Cross Functional Teams (CFTs).

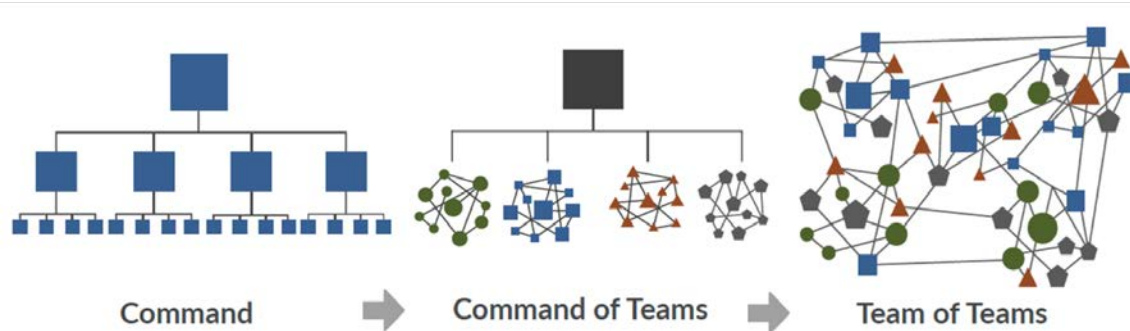


Figure 10. Team Management Progression. Adapted from Reading Graphics (2018).

Not surprisingly, the NAE requires project management concepts and sees its strengths on a large scale. Using language mirroring project management terms, the NAE looks to “drive systemically cross-functional, cross-command practices” (Shoemaker et al., 2015, p. 8) and considers these practices to be the “cornerstone to success” (p. 8). Indeed, one of the greatest strengths of the NAE framework is its high reliance on the integrated team concept. Considering that the project management/“team of teams” concept is core to successful business practices, we suggest that a due-course officer versed in their practices exhibits the “grounding in business practices” (p. 8) values as defined in the FY-18, -19, and -20 Convening Orders (Stackley, 2017; Woods, 2018, 2019).

The project management frameworks of an IPT or CFT is already in-place, executed, and headed by the commanding officer of a TACAIR squadron. Department head meetings bring all the department’s leadership together to streamline the running of the squadron. Civilian integrated product teams are used to promote efficiency and time-to-market while reducing costs. Cross-functional teams are developed when necessary. In a TACAIR squadron, commanders can follow the same concept in department head meetings to reduce operational friction and increase efficiency. The requirement to create a cohesive and efficient team with management skills is broadly desired in the convening order for commander command.

6. Versed in Managing Organizational Culture

Promotion Board Precept and Convening Order language for the past three years has placed great importance on the ability of an officer to have led and exhibit the potential to lead diverse organizations. We viewed this requirement in two contexts. First, we considered there to be diversity in mission. The Navy realizes that there is great value in providing a broad experience base in leadership opportunities for its officers. Even due-course officers experience a “disassociated sea tour” in which they are billeted to an organization that is not their primary warfighting specialty. Second, we considered the more traditional sense of diversity in diversity of the workforce based on cultural and life experiences. The Navy again places great value in the shared experiences of its sailors entrusted to the care of the due-course officers placed in command roles. Promotion Board Precept language specifically addresses this fact in stating,

To be effective, the Navy officer corps must draw upon its rich diversity of experience, backgrounds, perspective, innovative talent, and depth and breadth of vision. You should give careful attention to selecting officers who possess these valuable attributes and have demonstrated the potential to lead large organizations in a complex world composed of men and women coming from widely varying backgrounds. (Mabus, 2016, A-4; Spencer, 2017, A-4; Spencer 2018, A-4)

We additionally considered certain aspects of an organization’s culture not spelled out in guiding documentation as being critical indicators of success and which require active management by leadership. For example, an organization’s retention and promotion rates of its members can be considered a general indicator of organizational health, which requires constant and active management to influence. Thus, the individual ability to motivate and promote positive command relationships based on organizational diversity is vital to creating a successful squadron.

C. ORGANIZATIONAL-LEVEL CORE COMPETENCIES OF A TACAIR SQUADRON

We suggest that organizational level core competencies matched with individual level core competencies will give the best benefit to Naval Aviation, as Lahti (1999) suggests: “The most effective use of core competencies involves integrating the ILCCs

with the OLCCs” (p. 70). With the derivation of individual level core competencies complete in regard to a due-course officer, we offer the following discussion on OLCCs of a TACAIR squadron.

Naval Aviation Vision 2016–2025 outlines three pillars of focus: readiness, capability, and capacity (Naval Aviation Enterprise, 2016). While each one of these comprises a focused approach for the NAE, together they complement each other to create a holistic approach to meeting national strategic requirements. Like the guiding documents we used for deriving individual core competencies, we use these three pillars as the primary sources for deriving organizational level core competencies. We first define each pillar and then offer our suggested OLCCs.

According to *Naval Aviation Vision 2016–2025*, readiness is “the essential key to our warfighting proficiency. Ready for tasking aircraft, ships ready to get underway, Sailors and Marines fully trained in their missions are the means by which Naval Aviation will protect and advance our national interests” (Naval Aviation Enterprise, 2016, p. 4). Readiness is always at the forefront of commanders’ minds, and achieving the desired level of readiness is constantly challenged by resource-constrained environments. In such environments, Naval Aviation decision-makers must establish deliberate and carefully thought requirements in order to ensure combat readiness.

“Capabilities ... allow our military to achieve global reach and superiority of the sea, air, land, space, cyberspace and the electromagnetic spectrum (Naval Aviation Vision, 2016, p. 5). Naval Aviation’s focus is on enhancing integrated warfighting capabilities allowing for highly interactive networks of people, sensors, and weapons to address strategic and tactical problem sets. Getting capabilities into the hands of the warfighter means paving the way for seamless integration and execution of mission tasks. This ability is highly dependent on an innovative workforce empowered to leverage multiple independently operating systems.

Capacity is defined into two parts: aggregate and operational. “Aggregate capacity is force structure and a matter of national policy, whereas operational capacity is the quantity of existing Naval Aviation capabilities that can be leveraged to succeed across any

of the five essential functions in the maritime strategy” (Naval Aviation Enterprise, 2016, p. 5). Furthermore, “possessing the right operational capacity requires a credible deterrent capability and optimal readiness levels (Naval Aviation Enterprise, 2016, p. 5) solidifying that all three pillars are important for success.

From these three pillars, OLCCs can be derived for a TACAIR squadron. These core competencies are essential to meeting the focused demands of the NAE. We propose the following three OLCCs for a TACAIR squadron:

- A qualified, standardized, innovative workforce
- Ability to supply mission-capable aircraft for sustained carrier operations
- Proactive, versatile command culture

We suggest that these three competencies allow TACAIR squadrons to meet the requirements of readiness, capabilities, and capacity. These competencies are unique to Naval Aviation, allow squadrons to dominate the airborne maritime environment, and support national strategy objectives.

1. A Qualified, Standardized, Innovative Workforce

Squadrons need to be versed in numerous programs, skill sets, and mission sets. The range of military operations, as depicted in Figure 11, involves mission sets from security cooperation, deterrence, crisis response, contingency operation, and major operations and campaigns. Each one requires different support from a squadron, whether it be providing an overhead presence, ISR, or bombs on target.



Figure 11. Range of Military Operations Faced by TACAIR Community. Source: Joint Chiefs of Staff (2018).

Navy leadership depends on squadron-level expertise to solve difficult problems, which requires innovation. Innovation at the squadron level provides the foundation that keeps the Navy as a whole ahead of its adversaries no matter the mission set. The mission set skills a squadron possesses must be such that they fulfill the Competition–Conflict Spectrum for the Military Dimension of Power as defined in the *Design for Maintaining Maritime Superiority Version 2.0* (DMMS) strategy document and depicted in Figure 12 (Richardson, 2018).

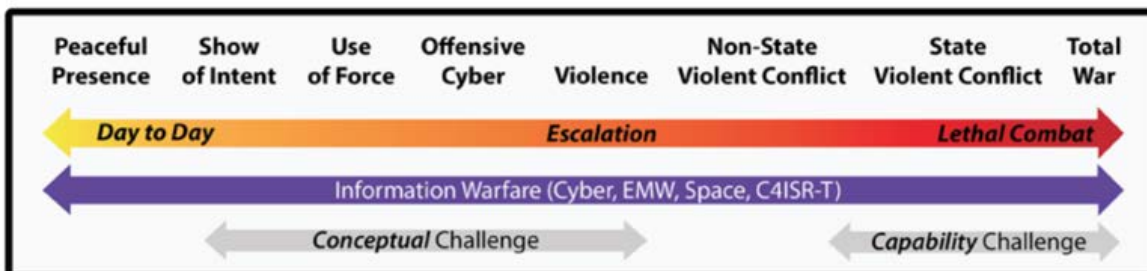


Figure 12. Competition–Conflict Spectrum. Source: Richardson (2018).

The culture of by-the-book execution, and the opportunities for individual thought, has developed in naval aviation over decades. Schools, training aids, and standardized training requirements provide a formidable infrastructure aimed at accomplishing the Navy's goals. In addition, the level of standardization adhered to within squadrons allows personnel to shift between units and work with other units seamlessly. This is essential to generating a proficient fighting force across multiple units in a resource-constrained environment where the luxury of 100% manning is rarely realized.

2. Ability to Supply Mission-Capable Aircraft for Sustained Carrier Operations

The TACAIR community is at the front lines of maritime security. Its squadrons provide the kinetic and non-kinetic effects that not only deter adversaries, but also deliver the might of the U.S. Navy when called upon. The *Cooperative Strategy for 21st Century Seapower*, echoed in the *Naval Aviation Vision 2016–2025*, states that the essential functions that maritime forces must meet are “all domain access, deterrence, sea control, power projection, and maritime security are missions that depend upon Naval Aviation to guarantee their success” (Naval Aviation Enterprise, 2016, p. 4). The FA-18 Super Hornet, EA-18 Growler, E2-C Hawkeye, and soon the F-35C Lighting II, are the resources which provide Naval Aviation's might across all of the delineated essential functions. The Super Hornet's ability to deliver ordnance, the Growler's ability to provide electronic attack, and the situational awareness and integration provided by the Hawkeye, come together to provide a multi-mission force. Aircraft need to be fully mission-capable, with aircrew and maintainers able to load and operate the aircraft across any mission set.

From appropriation to delivering assets, the “system-of-systems approach by all Naval Aviation stakeholders gives warfighters the capabilities needed in the battlespace to fight and win” (Naval Aviation Enterprise, 2016, p. 23). TACAIR squadrons are the tools with which the Navy implements its policy. Squadrons need to be good stewards of the NAE's assets in order to provide sustained operating when called upon. This concept traces directly to the concept of capacity in the *Naval Aviation Vision 2016–2025* as “having the right number of units, manned, trained, and equipped in the right configuration to meet demand” (Naval Aviation Enterprise, 2016, p. 7).

The NAE's budget of \$40 billion is an impressive and daunting target to any foreign navy's aviation component to meet (Shoemaker et al., 2015). Combined with the aircraft carrier and her complement of TACAIR squadrons embarked aboard, the carrier air wing provides a unique capability unmatched by any current nation. As *Naval Aviation Vision 2016–2025* illustrates, "An aircraft carrier and its embarked air wing operate across all warfare areas" (Naval Aviation Enterprise, 2016, p. 8). Combined with a carrier strike group's ability to sustain flight operations over a duration of many months, this organizational core competency has yet to be rivaled by ally or adversary. This team of assets and people make TACAIR unique and set it apart from other U.S. airborne organizations and our adversaries.

As an example, in 2014, the USS *George H.W. Bush* Carrier Strike Group was on station in the Arabian Gulf within 30 hours when tasked to participate in combat operations against the Islamic State. The aircraft assigned to TACAIR squadrons were "the only strike option on station for the first 10 days of the conflict and remained there for 54 days as the only viable U.S. asset" (Naval Aviation Enterprise, 2016, p. 11). No other organization can dynamically support sustained air and ground combat operations organically better than a TACAIR squadron can when operating in theater.

3. Proactive, Versatile Command Culture

Commenting on the state of Naval Aviation in 2018, Commander, Naval Air Forces writes in *The Hook, Journal of Naval Aviation*, "We've spent a lot of time aligning our activities so that every person in the Naval Aviation Enterprise understands that what they do on a daily basis contributes toward achieving our goals and desired outcomes" (Miller, 2019, p. 6). Although everyone in a TACAIR squadron has a unique job, their understanding of their role is imperative to completing essential tasks correctly and on time. This cannot be done without a command climate that supports these efforts and gives sailors the room to lean forward and solve problems without constant oversight. In general, TACAIR's command climates allow for such creativity, and the most successful squadrons harness creativity to the maximum extent possible. In this way, challenging missions and short order tasking can be repeatedly and predictably met with success.

The market for the command is its people and all who associate with them. As Admiral Richardson, Chief of Naval Operations, has stated, “There are two standards to measure officers in command. ... The second—and higher standard—is trust and confidence, both with the American people we are sworn to protect and across all levels of the chain-of-command” (DoN, 2018a, p. 1). He further elaborates, “Trust and confidence are the two coins of the realm that enable decentralized command and operations at sea; they are the key to our effectiveness as a force” (DoN, 2018a, p. 1). TACAIR commands, and particularly the commanding officers in charge of them, endeavor to build highly developed relationships within their organizations to cultivate and entrench trust and confidence within their members. In doing so, commands build a safe working environment for people to innovate and challenge the established ways of doing business, thereby engaging in new ideas across multiple spectrums.

The U.S. Navy understanding of decentralized command is one of the “key [factors] to our effectiveness as a force” (Richardson, 2018, p. 17). Not all foreign nation navies use this concept, and our adversaries may not be as well trained and proficient in exercising it. TACAIR squadrons excel at solving the problem at hand, without asking for assistance from the hierarchy. This is due to the well-balanced relationship between compliance, culture, and values consistent among NAE units. We suggest that an organization that does not exhibit this well-balanced approach runs the risk of limiting its effectiveness or ceding advantage to the enemy as pointed out in the 2018 *Navy Leader Development Framework Version 2.0* (DoN, 2018a, p. 5). A culture of creativity in a command, or encouraging the ability to be creative, empowers members to leverage innovation to derive solutions to the most demanding problems and if not allowed, can cede any number of advantages to the enemy (DoN, 2018a, p. 5).

TACAIR squadrons should thus “create space for values and creativity. But ... also understand the importance of compliance for its unique and irreplaceable contribution when properly applied” (DoN, 2018a, p. 5). Whether in the air, Ready Room, or hangar bay, TACAIR culture allows its members to speak up, express their viewpoints, and give constructive criticism with the goal of making the organization better. While feedback is still given with respect, very few organizations set seniority and rank aside like the

TACAIR community does in order to critique less than perfect performance in the hopes of reaching it in the future. We suggest the summation of these characteristics create command cultures that lend themselves to creating organizations that are proactive and versatile in nature.

D. INTEGRATION OF INDIVIDUAL- AND ORGANIZATIONAL-LEVEL CORE COMPETENCIES IN A TACAIR SQUADRON SETTING

According to Lahti (1999), the most effective use of core competencies comes about when ILCCs and OLCCs are aligned and integrated. Lahti (1999) goes on to say that ILCCs and OLCCs need to have the same base for performance and that the “most pertinent base would be the organization’s vision, strategy, mission, and values” (p. 70). Commanding officers are ultimately responsible for the shepherding of a squadron’s vision, strategy, mission, and values and are therefore optimally positioned to helm the integration of their ILCCs and the squadron’s OLCCs as espoused by Lahti.

With regard to a qualified, standardized and innovative workforce, a commanding officer needs to be willing to foster innovation. Providing an environment in which sailors have a venue to express their ideas and are willing to implement them is essential for a workforce to maintain its competitive advantage. In addition, critical thinking allows commanding officers to balance the need for operational necessity with training requirements. Without properly integrating training, squadrons would be unable to maintain qualifications and fall out of standardization.

Providing mission capable aircraft for sustained carrier operations is a challenge in the resource-constrained environment commanding officers currently find themselves in. Optimizing training opportunities and limited resources is a must if a commanding officer hopes to be successful underway. In addition, to be successful in this endeavor, leaders must understand how the naval aviation enterprise works in order to effectively and efficiently voice a squadron’s concerns and corresponding solutions. Project management process understanding in conjunction with critical thinking allows commanding offers to maximize the knowledge and skills of every department to overcome challenges inherent in the carrier environment.

A commanding officer is directly responsible for a command culture. In order to maintain the competitive edge, new ideas need to be cultivated and tested, and best practices implemented. With the multitude of mission sets a TACAIR squadron is required to be prepared to participate in, open communication, transparency, and trust is essential at every level of the command. Knowing how to harness the strengths of a squadron is not only beneficial to command performance but builds a foundation upon which other elements of the military can depend.

Officers who exemplify the optimal individual level core competencies of a TACAIR commanding officer compliment a TACAIR squadron's organizational core competencies to the maximum extent possible. The symbiotic relationship between organizational and individual core competencies, depicted in Table 3, provides the best possible combination of traits needed for operational success.

Table 3. ILCCs and OLCCs for the TACAIR Community

<u>Individual Level Core Competencies</u>	<u>Organizational Level Core Competencies</u>
Critical thinking	A qualified, standardized, innovative workforce
Resource-constrained environment operations	
Fostering innovation	Ability to supply mission-capable aircraft for sustained carrier operations
Understanding enterprise operations	
Project management/"team of teams" concept	Proactive, versatile command culture
Versed in managing organizational culture	

V. CORE COMPETENCY FRAMEWORK

In this chapter, we briefly revisit the requirements of a core competency as discussed by Prahalad and Hamel (1990), Watts (2013), and Cockell et al. (1992). Second, we suggest a comprehensive framework to apply to our core competencies with the goal of meeting the combined needs of the NAE and E4SFR. Last, we offer suggested analytic confidence levels as to applicability of our framework to our individual level and organizational level core competencies.

A. CORE COMPETENCY CRITERIA REVISITED

Various authors have written that, for a core competency to be considered valid, it should meet certain criteria or have certain characteristics. One such criteria is the number of core competencies an organization recognizes. According to Prahalad and Hamel (1990) and further supported by Cockell et al. (1992) and Watts (2013), a list of an organization's core competencies should be limited to no more than five or six. Prahalad and Hamel (1990) offered only three characteristics of a core competency. Cockell et al. (1992) added to that number with five suggested DoD-specific core competencies. Watts (2013) followed suit suggesting a total of six core competencies for the military as a whole due to the immense scope of responsibilities inherent to the DoD and further applied them to the DIB. Following the work of Prahalad and Hamel (1990), Cockell et al. (1992), and Watts (2013), we have limited the number of our suggested ILCCs to six and OLCCs to three.

Building on Prahalad and Hamel's (1990) work, Cockell et al. (1992) introduced the idea of a *national security business area* as the mission area of effort in which core competencies must be focused to have operational impact (p. 6). Accordingly, we consider the TCAIR community's national security business area to be those mission areas that directly support the essential maritime functions of All Domain Access, Deterrence, Sea Control, Power Projection, and Maritime Security as outlined in the *Naval Aviation Vision 2016-2025* strategy document (Naval Aviation Enterprise, 2016). In defining the above five functions as our national security business area, we effectively link our suggested core competencies to operational lines of effort.

Lastly, recall that Watts (2013) utilized the combined concepts of Prahalad and Hamel (1990) and Cockell et al. (1992) in order to provide suggested lists of DoD and DIB core competencies. Table 4 provides a summary of their collected works and results.

Table 4. Summary of Core Competency Criteria and Application

Prahalad and Hamel (1990)	Cockell et al. (1992)	Watts (2013)	Watts (2013)
Criteria	Criteria	Derived DoD Core Competencies	Derived DIB Core Competencies
Provide potential access to a wide variety of markets	Complex combinations of technological, production, and operational skills	Global non-nuclear precision strike	Precision weapons
Contribute to perceived customer benefits	Result from path-dependent processes that are hard to duplicate	Flexible, effective nuclear forces	Low signature platforms such as stealthy air vehicles, both manned and unmanned, and nuclear submarines
Difficult to imitate	Key for determining outcomes of military competitions, crises, or wars	Projecting and sustaining forces sufficient to conduct campaigns at the operational level of war	Global Intelligence, Surveillance, and Reconnaissance (ISR)
	Apply to many missions and to most military services and operational commands	Access to and freed of action in the global commons	Integrated battle networks that marry ISR with robust command, control, and communications
	Influence force postures, plans, and actions of adversaries by discouraging other countries from military competition with America or by imposing major costs upon them	Cryptologic enterprise	Skills, procedures, tools, and organizations for dominating the electromagnetic spectrum
		Realistic combat training	Large-scale system and network-architecture integration

B. SUGGESTED COMPREHENSIVE FRAMEWORK FOR TACAIR CORE COMPETENCIES

Building upon and integrating the work of Prahalad and Hamel (1990) and Cockell et al. (1992), we suggest that, for any core competency to be useful to the TACAIR community, it must meet the following comprehensive framework requirements, as depicted in Figure 13.

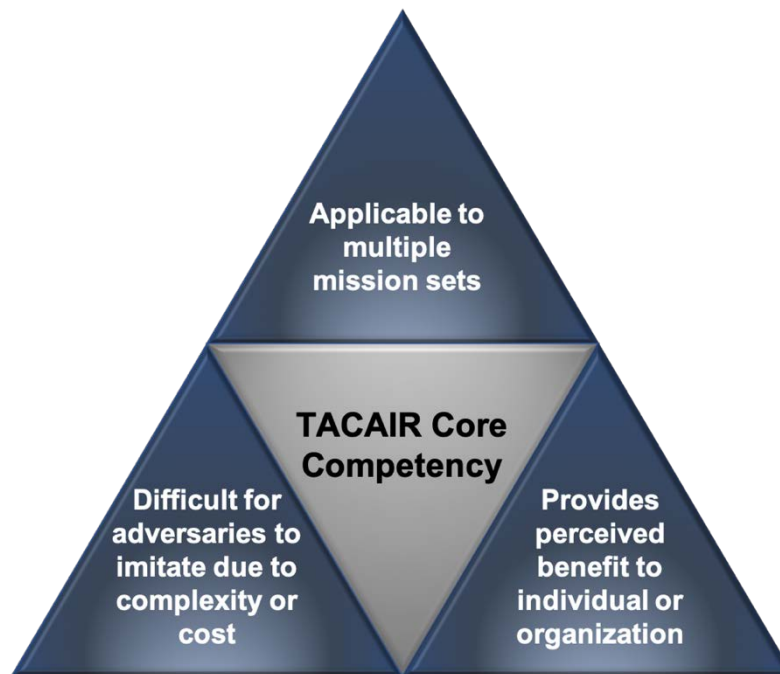


Figure 13. TACAIR Core Competency Framework

A core competency must exhibit applicability to a wide variety of mission sets. We propose that TACAIR mission sets can be viewed as individual markets through the lens of Prahalad and Hamel's (1990) work. Analogous to how business markets are understood to be a focal point for a corporation's products and services, mission sets can similarly be considered a unique collection of goals and tasks requiring specialized skills and tools to attain success. Therefore, by exhibiting applicability to multiple mission sets, a core competency provides de facto access to wide variety of markets as defined by Prahalad and Hamel (1990). Additionally, Cockell et al. (1992) require that a core competency "apply

to many missions” (p. 2). Our proposed framework characteristic of mission set applicability thus satisfies the work of Cockell et al. in that regard.

We agree with Prahalad and Hamel (1990) and Cockell et al. (1992) that a core competency should be difficult for adversaries to imitate either due to its complexity or cost. However, we believe a core competency should not be “gold plated” in cost or complexity for the sake of being so. Rather, we suggest that a core competency’s complexity stems from its path-dependent nature and intricate interdependency within an organization as it spans technological, operational, or production effort centers as identified by Cockell et al. Complexity should not be a “designed in” factor of a core competency; rather, it should be a characteristic identified during the process of deriving core competencies. With regard to cost, we suggest a similar logic.

The cost of a core competency can be thought of in several ways. First, there is the actual price to be considered in cultivating a core competency. A prime example is the effort currently underway in developing hypersonic weaponry. For instance, Lockheed Martin was recently awarded \$2.5 billion in contracts to continue efforts in hypersonic weapons development to meet DoD capability gaps as compared to Chinese and Russian efforts (Lagrone, 2019). Few nations have the capital to match such expenditures and are therefore priced out of attaining a hypersonic weapon core competency. An organization’s opportunity costs must also be considered when discussing the cost nature of a core competency.

The opportunity cost of a developing and maintaining a core competency is a significant factor in an organization’s decision to expend resources and assets in an effort to attain it. We again use hypersonic weapon development as an example. It is not beyond reason that an adversary nation possesses the resources and capital that would be required to attain hypersonic weaponry but chooses instead to dedicate those resources and capital to internal and domestic issues. In this case, this fictitious nation would have deemed the opportunity cost of failing to meet domestic social program obligations as too high and as such chose not to attempt to imitate the hypersonic weapon competency of its peers.

Lastly, we argue that a core competency must provide a perceived benefit to the end user, be it an organization or individual. Providing a perceived benefit to the end user is the mechanism by which a core competency “justifies its existence,” providing traceability from an organization’s strategic plan to goal attainment, be that of a profit/loss nature or mission success. Once properly identified, maintaining core competencies consumes vast amounts of an organization’s resources and rightly so. Often, the end user is unaware of the high cost associated with cultivating and maintaining a core competency; however, they need to be aware of the benefits it provides. We suggest that a core competency with unrealized user benefits will go unutilized and eventually cease to be of use to an organization. Take, for example, the Naval Postgraduate School’s Graduate Writing Center (GWC).

The GWC has the stated mission of developing the writing and critical thinking skills of NPS students in order to foster success in school and beyond (Graduate Writing Center, n.d.). The cost to deliver that competency to the student body is high. The GWC employs nearly a dozen writing coaches on and off-site, maintains a robust workshop schedule, and continuously updates an online resource collection for student use. Yet the benefit to the average NPS student end-user is clear: improved writing ability, higher grades, and critical thinking skills that will serve them well during their time as students and in their follow-on assignments. The high level of benefit perceived by the NPS student body thus ensures continued allocation of NPS resources to the GWC in order to maintain its competency providing service. We hypothesize that, if student body perception of the benefits provided by the GWC were to wane, then the core competency it offers would diminish as well, highlighting the requirement of perceived end-user benefits for a core competency.

Another anecdotal example is the Aviation Safety Awareness Program (ASAP) portal for Naval Aviation. Based on the successful Federal Aviation Administration’s Aviation Safety Action Program, the Navy implemented its own model in 2006 (United States Marine Corps, 2019). The web-enabled portal and its underlying database exist to allow aircrew of a squadron to make anonymous and not for retribution remarks concerning safety-related aspects of any given flight or ground event. Like the GWC example,

significant assets were expended in order to make this tool available to every squadron within Naval Aviation's purview. However, the results the ASAP system generated were typically only seen by a squadron's safety, executive, and commanding officer with the latter's exposure only occurring when the safety officer identified an event of concern. As ASAP results provided no perceived benefit to rank and file aircrew, it fell into a state of disuse requiring the release of official directives requiring its use as exemplified in MARADMIN 202/19. From our personal experience of having witnessed this system's implementation, we can attest that once ASAP results were made public and aircrew were able to witness informed flight and ground safety decisions being made, the system's perceived benefits to aircrew users increased significantly. This anecdotal example of the ASAP system serves to further highlight the importance that perceived benefits play in determining core competencies.

C. COMPREHENSIVE FRAMEWORK APPLIED—INDIVIDUAL-LEVEL CORE COMPETENCIES

Based on the works of Prahalad and Hamel (1990) and Cockell et al. (1992), we have chosen to limit the number of our ILCCs to six. We also suggest that each core competency can be directly applied within a national security area defined as those essential mission functions delineated in the *Naval Aviation Vision 2016–2025* (Naval Aviation Enterprise, 2016). With those two principles understood, we offer the following suggested analysis of each core competency's relation to our comprehensive framework.

Our conclusions are presented via a color-coded “stoplight” method as depicted in Figure 14, followed by a short discussion. We acknowledge that our analytic confidence levels are predominantly based upon our collective experiences as TACAIR Naval Aviators and are therefore highly subjective in nature.⁶ As such, we encourage lively debate on our analyses.

⁶ The authors have both been selected for promotion to O-5 and successfully screened for operational command roles. Together, they have a combined total of over 5,000 hours of TACAIR flight time, have amassed in excess of 700 arrested landings aboard operational aircraft carriers, and have both completed operational department head tours. As such, they consider their experience level appropriate to mitigate some of the subjectivity of their assessments.

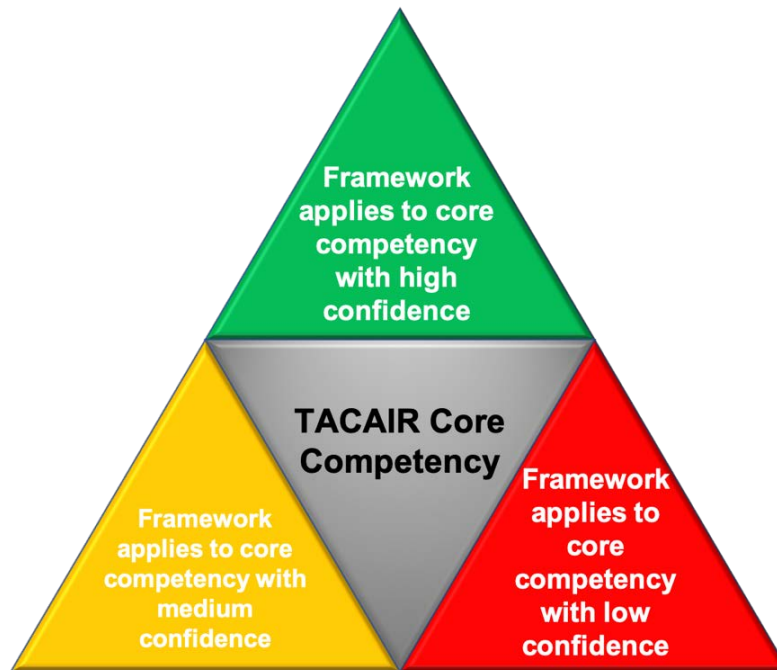


Figure 14. Comprehensive Framework Analysis Stoplight Example

For the purposes of our discussion, we used analytic confidence level guidance contained in Appendix A of *Joint Publication 2-0 Joint Intelligence*, dated October 22, 2013, to aid in our assessment of low, medium, and high confidence levels (Joint Chiefs of Staff, 2013, p. A-2). Figure 15 is taken directly from *Joint Publication 2-0* and is presented here to provide the “Term/Expressions” criteria for low, moderate, and high confidence levels, which we used to conduct our analysis (Joint Chiefs of Staff, 2013, p. A-2). For example, if we determined that it was “probable” that our framework would apply to a given core competency, we assigned a medium or moderate confidence level to it.

Expressing Confidence In Analytic Judgments

Confidence in a judgment is based on three factors: number of key assumptions required, the credibility and diversity of sourcing in the knowledge base, and the strength of argumentation. Each factor should be assessed independently and then in concert with the other factors to determine the confidence level. Multiple judgments in a product may contain varying levels of confidence. Confidence levels are stated as Low, Moderate, and High.

Phrases such as “we judge” or “we assess” are used to call attention to a product’s key assessment. Supporting assessments may use likelihood terms or expressions to distinguish them from assumptions or reporting. Below are guidelines for likelihood terms and the confidence levels with which they correspond.

<u>Low</u> • Uncorroborated information from good or marginal sources • Many assumptions • Mostly weak logical inferences, minimal methods application • Glaring intelligence gaps exist	<u>Moderate</u> • Partially corroborated information from good sources • Several assumptions • Mix of strong and weak inferences and methods • Minimum intelligence gaps exist	<u>High</u> • Well-corroborated information from proven sources • Minimal assumptions • Strong logical inferences and methods • No or minor intelligence gaps exist
<u>Terms/Expressions</u> • Possible • Could, may, might • Cannot judge, unclear	<u>Terms/Expressions</u> • Likely, unlikely • Probable, improbable • Anticipate, appear	<u>Terms/Expressions</u> • Will, will not • Almost certainly, remote • Highly likely, highly unlikely • Expect, assert, affirm

Figure 15. Analytic Confidence Level Terms and Expressions.
Adapted from Joint Chiefs of Staff (2013).

1. Ability to Think Critically

We assessed strong correlation between a critical thinking core competency and its applicability to multiple mission sets, as well as providing perceived benefits to an individual or organization, as shown in Figure 16. We assessed a high correlation between the core competency of critical thinking and the skills required to face the myriad of challenges mission planning and execution present to a TACAIR officer. Similarly, we assessed that, given the appropriate application of critical thinking skills, an individual or organization would benefit more so in that case than one in which critical thinking skills were absent. As such, we assessed there to be high confidence level in the critical thinking core competency providing perceived benefits to an organization or individual. In analyzing the difficulty an adversary would face in imitating the ability to think critically, we were forced to assign a medium confidence level. Given the nearly ubiquitous emphasis IRGE programs place on critical thinking, it is improbable that an adversary would fail in developing the ability to think critically. Therefore, we assessed a medium level of confidence to critical thinking in relation to our framework.

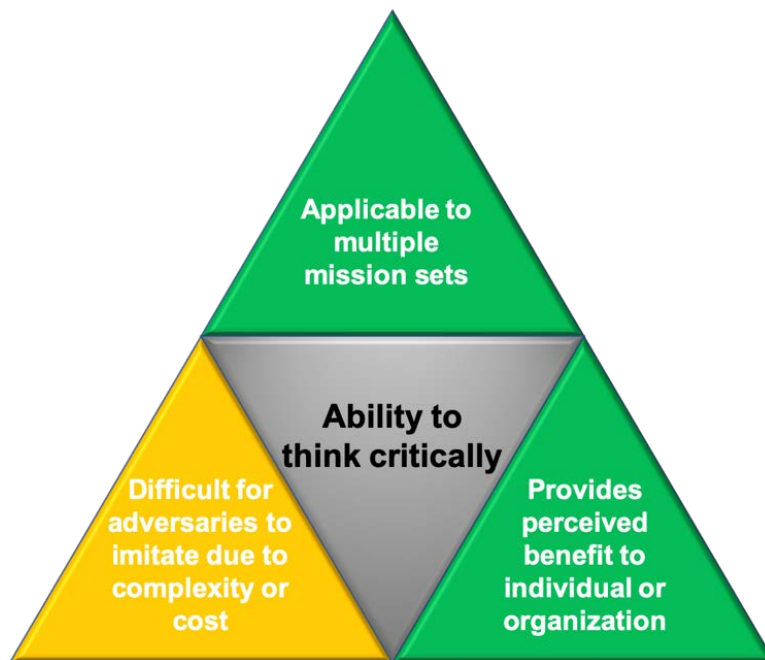


Figure 16. Comprehensive Framework Applied to Critical Thinking Core Competency

2. Resource-Constrained Environment Operations

We assessed it as highly likely that the three tenets of our framework applied to the core competency of resource-constrained environment operations as depicted in Figure 17. The DoD has been operating in a fiscally austere environment due to multiple iterations of continuing resolution operations and sequestration. By its very nature, this manner of programmatic budgeting has left all services having to “do more with less” for years. Naval Aviation is no stranger to this dilemma as mission proficiencies and available flight hours waned. We therefore see a strong correlation between resource-constrained operations and their ability to impact multiple mission sets and conclude that our framework applies in this instance with high confidence. We further propose that comprehending how to operate well within a resource constrained environment almost certainly provides benefits to individuals and organizations.

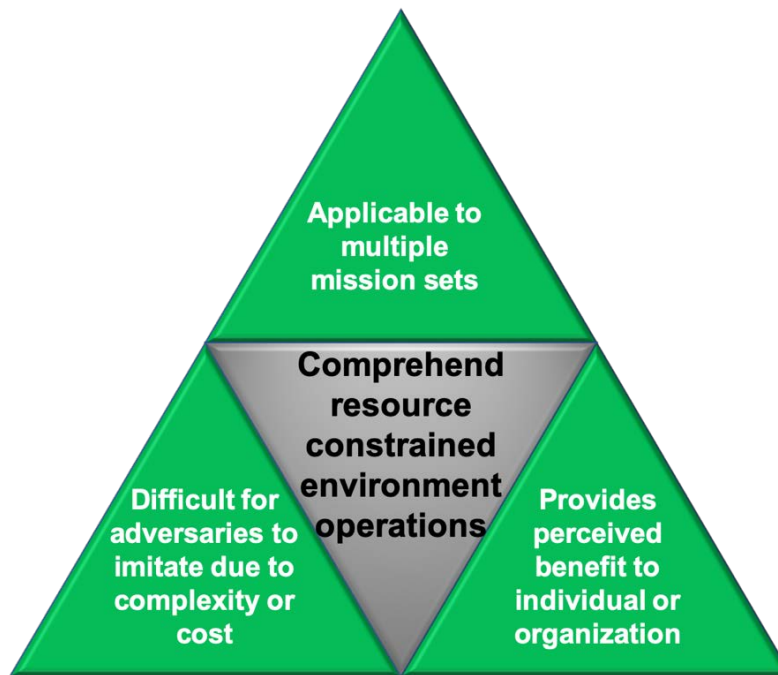


Figure 17. Comprehensive Framework Applied to Resource-Constrained Environment Operations Core Competency

We suggest that operating in a resource-constrained environment forces decision-makers to identify the constraints within their organization, perform a risk assessment based on identified constraints, and develop a plan to restructure assets around them so as to meet mission goals. In accomplishing these efforts, decision-makers ultimately add incremental value to the organization and its individuals. We considered the alternative situation in which poor decisions were made in a resource-constrained environment and found it highly likely that the resulting outcome would undoubtedly be some lesser version than that of one made by a person trained in resource-constrained operations. Therefore, we assessed a high confidence level of applicability to our framework.

Last, we expect that adversaries would find it difficult to operate in a resource-constrained environment such as the one the United States has faced with sequestration and continuing resolutions as compared to the explosive growth our adversaries have exhibited in the last decade. We acknowledge that resource and constraint theories are taught in business school syllabi and are, therefore, highly accessible and well understood by our allies and adversaries alike. However, we argue our point from the perspective of currency and proficiency.

With regard to resource-constrained operations, we assert that our adversaries are neither current nor proficient in this core competency as evidenced by massive military and technological buildup in the South China Sea and hypersonic weapons development. Furthermore, we suggest that should our adversaries be faced with a fiscally austere environment similar to the one the United States has experienced, it would be highly likely they would have difficulty in meeting the performance of the DIB during such times.

3. Foster Innovation

Figure 18 depicts a high confidence level in the applicability of innovation to mission sets and perceived benefits. Like the discussion on the core competency of critical thinking as it relates to the mission sets, fostering innovative mindset is much the same. Challenging and never before seen mission problems require the ability to think outside the box and draw from multiple knowledge bases in order to meet mission goals. These are all tenets of an innovative thinker, and therefore, we assess it to be a high confidence level.

We also judged that innovation breeds perceived benefits, as well-implemented innovation initiatives are highly likely to further progress and development in both individuals and organizations. Revisiting our discussion on critical thinking again, we were forced to assess a medium level of confidence to an adversary's difficulty in imitating a culture where innovation is fostered. Though we feel fostering innovation is a critical core competency to possess, we concede that it is not a difficult competency to imitate as evidenced by the Russian and Chinese industrial bases taking the lead in hypersonic weapon development and resulting missile gap compared with U.S. efforts (Goure, 2018).

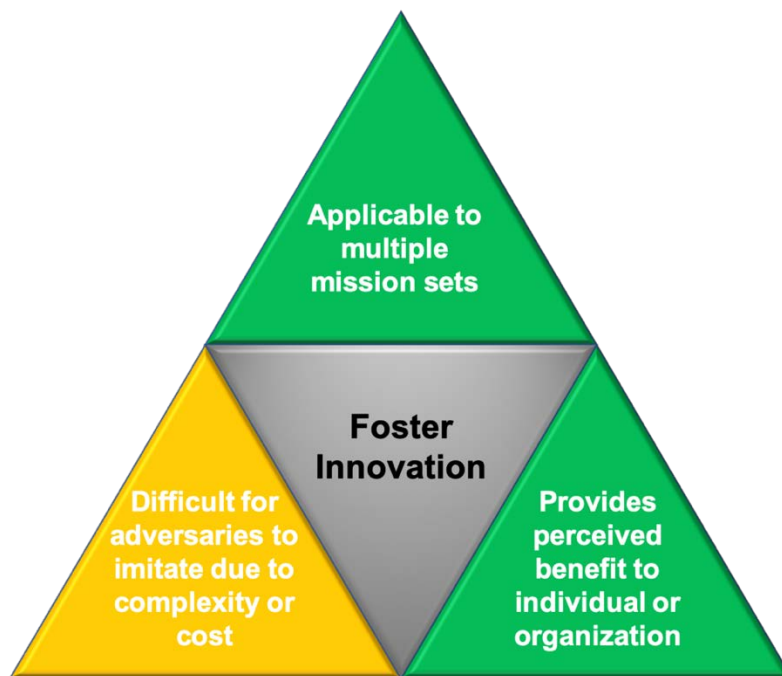


Figure 18. Comprehensive Framework Applied to Innovation Core Competency

4. Understand Enterprise-Level Operations

As Figure 19 depicts, we assessed a high confidence level in the applicability of the enterprise-level operations core competency to our framework in two of three criteria. The Naval Aviation community has viewed itself as an enterprise operation since 2004 and has been leveraging performance metrics in order to meet readiness demands worldwide (Naval Aviation Enterprise, n.d.-c). The enterprise operations enacted by the NAE allowed

community managers to track, source, and deliver high demand, low density aircraft parts such as generator control units and brake units, in order to maintain readiness standards. In doing so, enterprise-level operations have enabled the TACAIR community to maintain proficiency and currency levels across the spectrum of mission sets within their purview. As such, we assessed that enterprise-level thinking almost certainly applies to multiple missions sets. We also deemed that due to the cost, level of organizational buy-in required, complex interdependencies, and scope of implementation, it would be highly unlikely that an adversary would be able to effectively duplicate the results of an enterprise system like the one the NAE operates. With respect to perceived benefits, we assessed a medium confidence level of applicability based primarily upon the individual's perspective. Having established that the NAE solution enhances readiness for a squadron, it is apparent that the organization perceives benefit. However, due to the lack of understanding of enterprise efforts at the individual level, we conclude there is likely little perceived benefit of enterprise operations at the individual level.

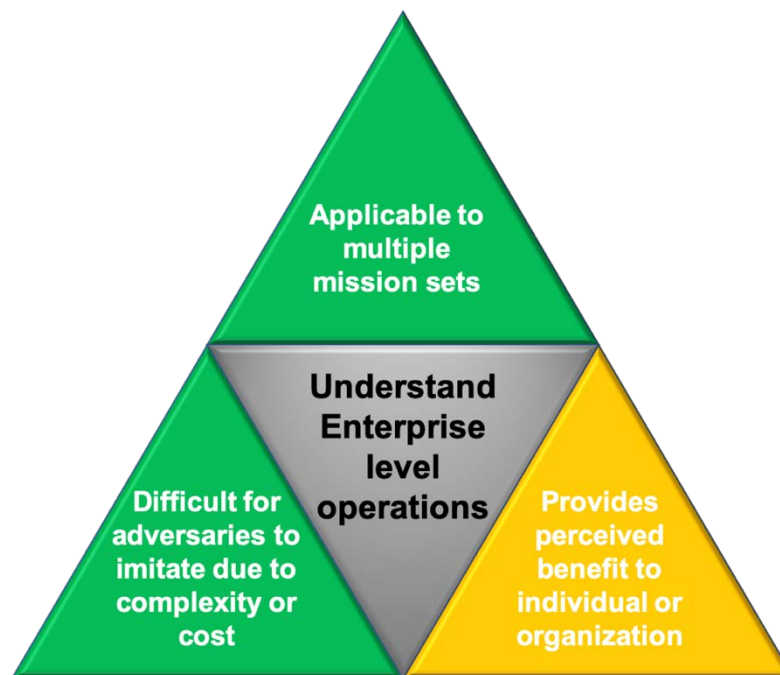


Figure 19. Comprehensive Framework Applied to Enterprise Operations Core Competency

5. Skilled in Team Management Concepts

We assessed the Team Management Core Competency as having the same characteristics of fostering innovation and critical thinking as depicted in Figure 20. We suggest that the study of team management concepts is as abundant among adversaries as it is to our own forces. As such, we assessed that it is unlikely that an adversary would find it difficult to imitate the study of team management or be prohibited in that effort due to cost or complexity.

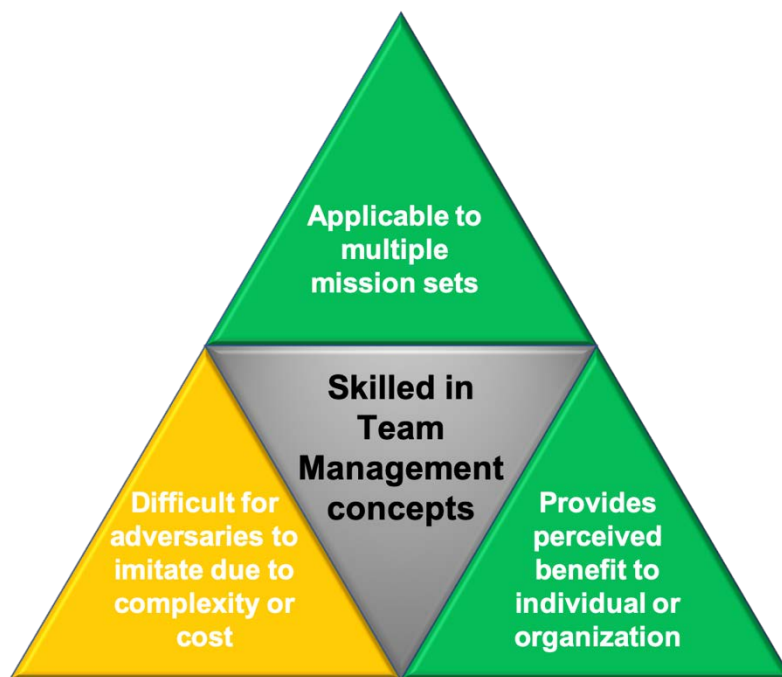


Figure 20. Comprehensive Framework Applied to Team Management Core Competency

6. Versed in Managing Organizational Culture

As shown in Figure 21, we assessed the core competency of being versed in managing organizational culture as being highly likely to provide perceived benefit to an organization or individual. The benefits of a well-managed organizational culture are well known and manifest themselves in increased productivity, retention, morale, esprit de corps, and promotion selection rate for the organization and its members. However, in

examining this core competency through the lens of our proposed framework, we found there to be a weaker connection to mission sets and imitation difficulty.

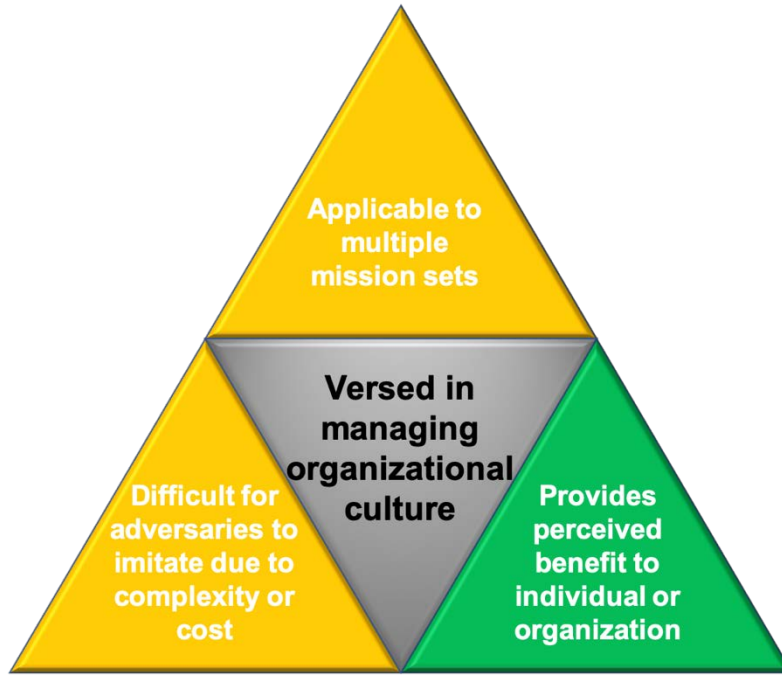


Figure 21. Comprehensive Framework Applied to Organizational Culture Management Core Competency

We acknowledge that a happier workforce would most likely result from a well-managed organizational culture and that a happier workforce is generally more productive. However, we assessed it as improbable that organizational culture is directly applicable to multiple mission sets, as we have defined that criteria as being operationally focused.

Lastly, for the same reasons previously discussed for the critical thinking, fostering innovation, and team management ILCCs, we assessed it is unlikely that managing organizational culture is difficult for adversaries to imitate due to cost or complexity.

D. COMPREHENSIVE FRAMEWORK APPLIED—ORGANIZATIONAL-LEVEL CORE COMPETENCIES

1. Qualified, Standardized, Innovative Workforce

We assessed a high confidence level to each of the three criteria of our framework, shown in Figure 22. We determined that it was highly likely that this core competency would apply to and add value to nearly all mission sets a TACAIR squadron would be responsible for. Similarly, we assessed that it was highly likely that such a workforce would provide a perceived benefit to the organization in the forms of increased mission accomplishment rates, decrease of maintenance hours, and increased ability of organizational problem-solving due to a highly qualified, standardized, and innovative workforce. Last, we assessed it was highly unlikely that an adversary would be able to imitate the cumulative effects this core competency would provide. However, we acknowledge that adversaries would not necessarily find it difficult to imitate the component pieces of this core competency, in which case we concede that a lower confidence level may be appropriate in that case.

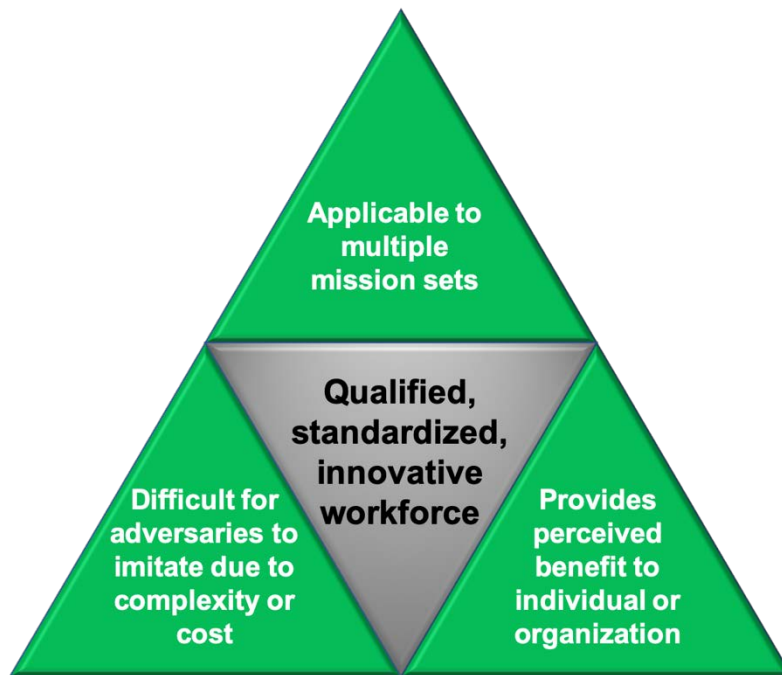


Figure 22. Comprehensive Framework Applied to Workforce OLCC

2. **Ability to Supply Mission-Capable Aircraft for Sustained Carrier Operations**

Figure 23 illustrates that we again assessed a high confidence to each of the three framework criteria for this OLCC. By its very nature, sustained carrier operations apply to multiple mission sets, and we assessed it accordingly. Also, given the that U.S. Navy is the only organization possessing 10 aircraft carriers that routinely conduct flight operations during both day and nighttime, we assessed it as highly unlikely that an adversary would be able to imitate our sustained operation rates either in whole or in part. We assessed with high certainty that an organization possessing this OLCC would provide great organizational benefit not only to itself but to the Carrier Strike Group as well.

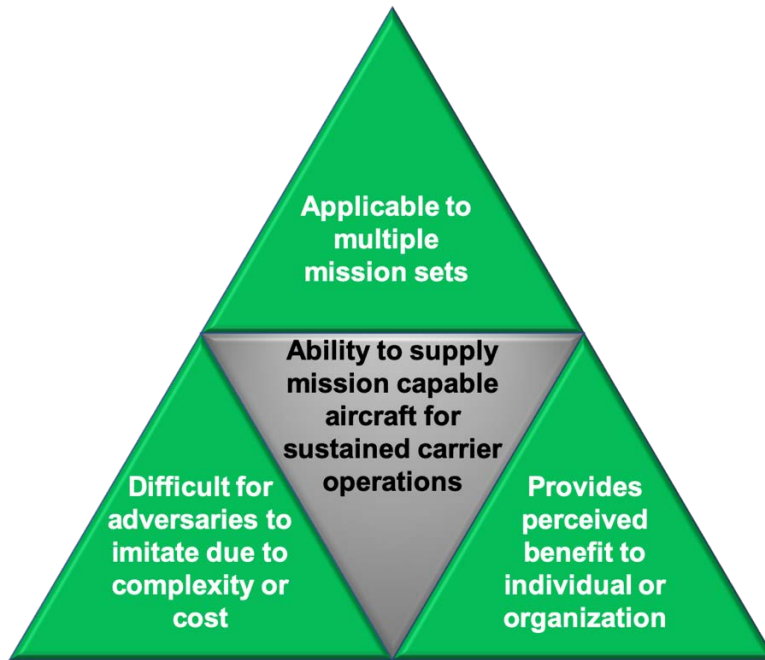


Figure 23. Comprehensive Framework Applied to Sustained Carrier Operations OLCC

A squadron that is able to provide mission-capable jets is not a success only to itself. It is a very common practice for squadrons facing readiness shortages to “borrow” another squadron’s aircraft in order to meet training or mission tasking. We therefore determined that it is highly likely that an organization which is able to supply mission capable aircraft adds value and provides benefit to its own organization and others.

3. Proactive, Versatile Command Culture

As shown in Figure 24, we assessed this OLCC in an identical fashion based on the same logic as the previously discussed Organizational Culture ILCC depicted in Figure 21.

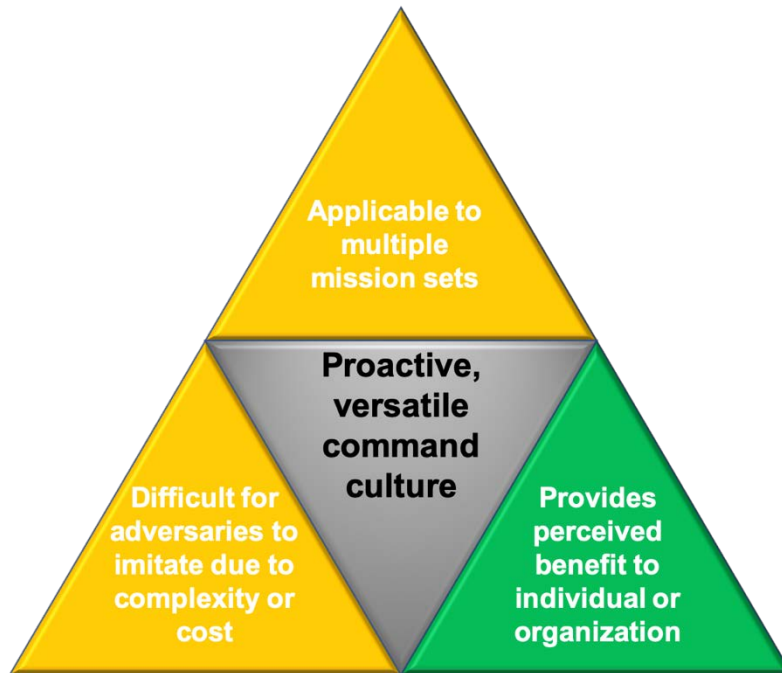


Figure 24. Comprehensive Framework Applied to Command Culture OLCC

E. CHAPTER SUMMARY

We built upon and integrated the theoretical frameworks of Prahalad and Hamel (1990) and Cockell et al (1992) using the example provided by Watts (2013) in order to derive our comprehensive framework. Using guidance contained within *Joint Publication 2-0* as a guide, we provided our own analytical confidence levels of our framework vis-à-vis our core competencies and presented that information in a “stoplight” manner. Overall, we found that the majority of our competencies exhibited a high level of applicability to our framework but did identify several moderate levels of confidence specifically in the areas of critical thinking, innovation, team management, and organizational culture due primarily to the widespread nature of their teachings.

VI. SUMMARY, RECOMMENDATIONS, AND SUGGESTIONS FOR FURTHER STUDY

The Naval Education Enterprise must produce leaders of character, integrity, and intelligence steeped not only in the art of war, the profession of arms, and the history and traditions of the Naval service, but also in a broader understanding of the technical and strategic complexities of the cognitive age, vital to assuring success in war, peace, and grey zone conflict; officer and enlisted leaders of every rank who think critically, communicate clearly, and are imbued with a bias for decisive and ethical action. Vision for Naval Education from the *2018 Education for Seapower Final Report*. (DoN, 2018c, p. 14)

A. SUMMARY

Throughout this study, we used publicly available statutory promotion board, aviation screening board, and NAE guiding documentation as our sources to derive ILCCs and OLCCs specific to due-course TACAIR officers. We provided definitions for and examples of each core competency we derived. Furthermore, using the works of Prahalad and Hamel (1990) and Cockell et al. (1992) as a guide, we designed a comprehensive framework that we used to provide analytical confidence levels of applicability for each of our proposed ILCCs and OLCCs as they pertained to our core competency criteria. Lastly, we provided traceability to national strategic objectives and described operational impacts for each of our ILCCs and OLCCs. This effort was undertaken in order to answer our primary research question: to identify essential core competencies from promotion and screening board guidance documents, which could then be used to make informed recommendations to Naval Aviation, NAE, and E4S stakeholders regarding due-course TACAIR officer IRGE opportunities. Our proposed ILCCs and OLCCs are presented in Table 5 for review with Figure 25 depicting traceability to national strategy.

Table 5. ILCCs and OLCCs for the TACAIR Community

<u>Individual Level Core Competencies</u>	<u>Organizational Level Core Competencies</u>
Critical thinking	A qualified, standardized, innovative workforce
Resource-constrained environment operations	
Fostering innovation	Ability to supply mission-capable aircraft for sustained carrier operations
Understanding enterprise operations	
Project management/“Team of Teams” concept	Proactive, versatile command culture
Versed in managing organizational culture	

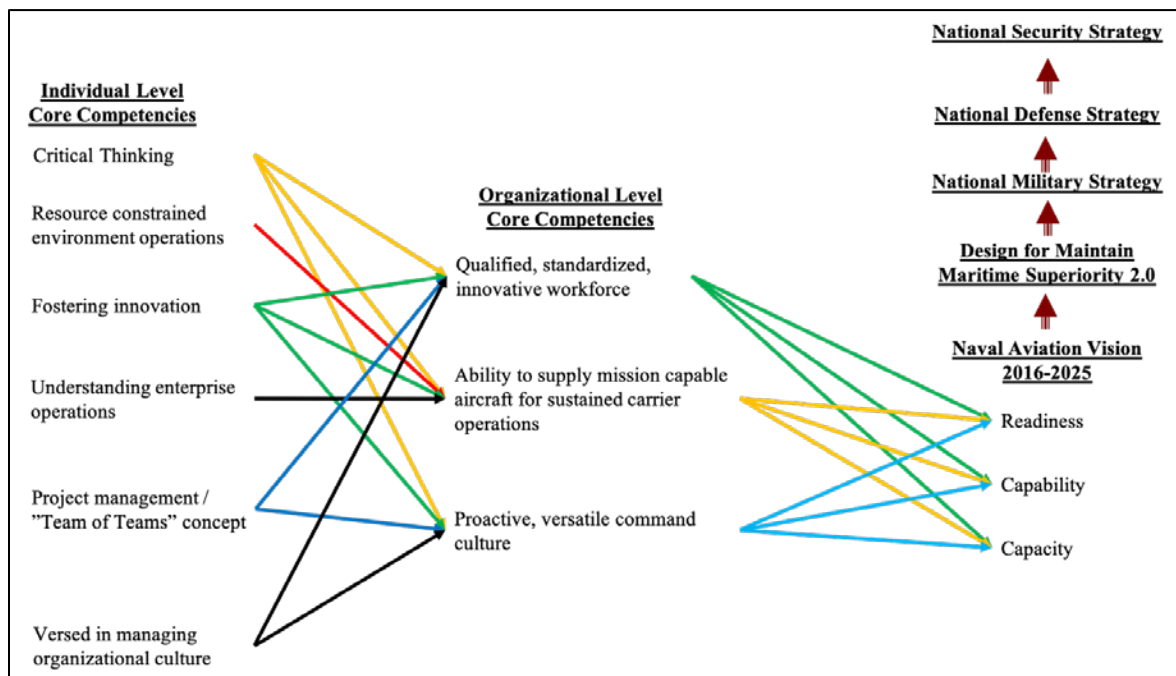


Figure 25. ILCC, OLCC, and National Strategy Traceability Matrix

B. RECOMMENDATIONS

Though nascent, NAVADMIN 263/18 and the E4SFR signal the beginning of far-reaching changes to the manner in which the Navy addresses graduate education for its officers. In order to make those changes to our education enterprise as impactful, ready, and relevant to the TACAIR community as possible, we humbly suggest the following recommendations based upon our research.

- (1) Future IRGE courses of study should be designed to educate due-course TACAIR officers with skills similar in nature to our ILCCs and OLCCs.

Until promotion and screening board guiding document language changes, they will continue to offer our best insight into the values sought by voting members of the boards. Our core competencies exhibit a comprehensive and robust lineage to these documents having been derived from three years of promotion and screen board documents, as well as foundational Naval Aviation and NAE vision statements. We suggest that an officer who educated in these core competencies will thus meet or exceed the requirements set forth by the Navy for promotion and operational screening.

- (2) Due-course TACAIR officers should attend IRGE no later than immediately following their post-department head billet.

The most recent *FY-20 Active Aviation Commander Command Screen Board Statistics and Takeways* was the first such presentation released in the previous three years that specifically addressed precepts, convening orders, and graduate education in relation to aviation officers and shared very similar conclusions to our own.⁷ Figure 26 depicts the ideal “Operational Command Path” for aviation officers, which in the context of our research is the same vernacular as a “due-course officer.”

⁷ It is important to note that this brief was not publicly available until very late in the project’s timeline and thus the authors had no knowledge of its existence as research was conducted.

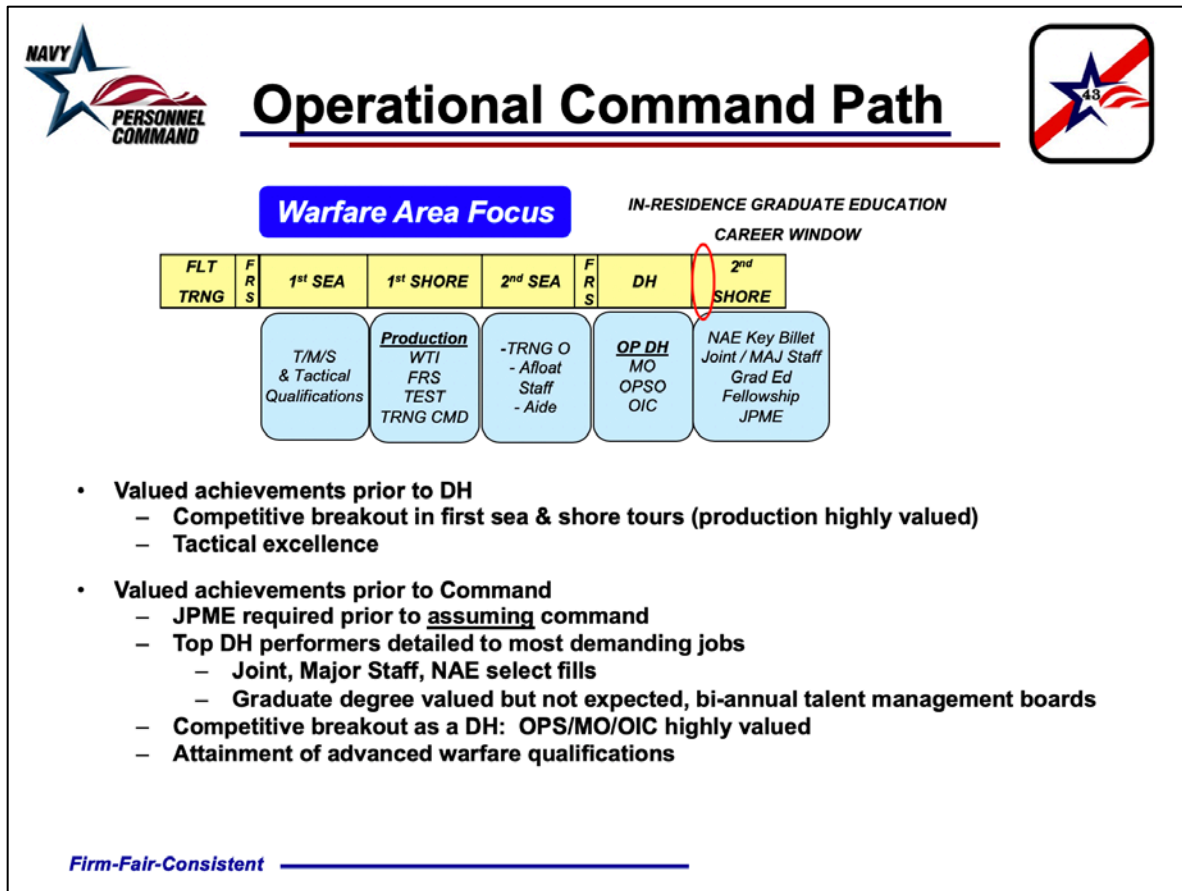


Figure 26. Operational Command Path Slide from ACSB Takeaways Brief. Source: Naval Personnel Command (2019b).

Recall from Figure 4 during our discussion on career pipeline and the window of opportunity for IRGE, our independent effort shared the same conclusion as the official *FY-20 Active Aviation Commander Command Screen Board Statistics and Takeways* brief. It is clear that our conclusion of an ideal window of opportunity for aviation officer IRGE is corroborated by the NPC Operational Command Path slide, and we therefore suggest that due-course officers be afforded every chance to attend an IRGE program no later than immediately after their post-department head billet.

- (3) Naval Postgraduate School should offer an IRGE program with a core course of study focused on strategic management and operational leadership. Further, this core course of study should be supplemented with secondary courses/tracks of study supporting the needs and unique requirements of warfare specialties (Aviation, Surface, Submarine, Special Operations & Warfare, etc.).

We recommend an MBA or MS course of study in strategic management and operational leadership be created and offered to students, due to the impressive overlaps between the learning objectives of such a course of study and our ILCCs and OLCCs. We also argue that each warfare community's due-course officers would be best served if their main course of study was complemented by elective courses that were somehow related to their warfare specialties. An MBA or MS degree is a decidedly attractive accolade for officers to achieve, and we contend that, in offering an IRGE such as this, NPS would be making every effort possible to attract highly qualified officers to attend.

C. SUGGESTIONS FOR FURTHER STUDY

1. Alternate Research Methods

Our efforts were limited to publicly available documentation. We acknowledge that more robust methods exist in order to derive ILCCs and OLCCs. One such method we recommend is engaging with Naval Aviation stakeholders directly with surveys and interviews. An initial target audience for survey distribution might be those officers who are currently in or have completed an operational department head or command tour. These officers might be able to provide the best insight as to the competencies desired or required of the billets at hand. Senior community leadership such as wing commanders or commodores would also be ideal sources of knowledge. Finally, we would suggest direct engagement via interviews at the senior admiral levels of Naval Aviation and Naval Personnel Command.

We propose that this would offer great insight into what key stakeholders desire of those due-course officers attending IRGE programs, while at the same time offering senior leadership a conduit for engagement at the program level. Properly executed, we believe that combining survey and interview methods would add a much-needed quantitative aspect to this research and suggest that anyone engaging in such an activity review the

work of Newman (2002), who used interviews to determine core competencies for TAR officers, and Chang, Tsai, & Williams (2018), who used surveys to determine new core competencies for Taiwanese Emergency Medical Technicians.

2. Expand the Scope of Research beyond the TACAIR Community Boundary

This study was narrowly scoped to determine core competencies applicable to only those due-course officers in the TACAIR community. It would be prudent for future research efforts to expand from this original scope and examine other warfare communities, as well as the Navy's sister services to determine what, if any, overlap exists between the core competencies derived by this project and future research results.

Additionally, we suggest that as part of expanding the scope of research beyond the TACAIR community that the IRGE offering of peer academic institutions be examined to further refine and align core competencies with business and industry efforts. A cursory examination of top peer academic institutions reveals multiple graduate-level programs offering MBA courses of study concerning strategic management and organizational leadership. Examination of these course offerings may reveal previously unthought-of avenues to pursue for core competency identification.

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